Tunbridge Wells Borough Council

Local Cycling and Walking Infrastructure Plan: Phase 2

Evidence Base for Pre-Submission Local Plan

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1 Introduction

1.1 Introduction to Study

The intention of this study is to expand upon the existing Tunbridge Wells LCWIP and develop complementary measures for Low-Traffic Neighbourhoods and Inter-Urban Routes which will further support the Borough's ambitions for mode shift to sustainable modes. For the purposes of this project, the below definitions have been used for each of the three key strands:

- **Low Traffic Neighbourhoods (LTNs)**: Low Traffic Neighbourhoods (LTN) aim to reduce the impact of through-vehicular traffic upon streets. Although coined as Low Traffic 'Neighbourhoods' which implies a residential focus, the approach can be applied to any area where through-traffic has an adverse effect on other users.
- **Local Cycling and Walking Infrastructure Plans (LCWIPs)**: LCWIPs provide a long-term strategic approach to developing local cycling and walking networks, usually over a 10 year period.
- **Inter-Urban Routes:** will be fit for cycling between the borough's main urban settlements using consistent, safe, and intuitive designs to ensure that cyclists can follow the routes comfortably from beginning to end

The combined package of measures will provide the borough with a comprehensive approach to improving conditions for walking and cycling both in the main urban settlements, and on journeys in between these settlements. The below figure has prepared to help illustrate the relationships between the three key strands of the project. Whilst each of the strands are inter-related, the intention is that they can be delivered independently of each other.

1.2 Report Structure

The report structure presents the findings from each of the individual project strands and concludes at the end with a recommended approach for the overarching delivery of the project.

2 Study Context

This chapter summarises the context for this study with particular focus on the policy framework and major developments proposed in the Borough.

2.1 National Policy Context

Figure 2-1: Gear Change and LTN 1/20 were both published in 2020 outlining significant investment and changes in walking and cycling

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

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

(Gear Change, 2020)

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

2.2 Local Policy Context

2.2.1 Tunbridge Wells' Local Plan

A Transport Assessment for the Borough's new Local Plan has been commissioned and is nearing completion. This assessment has highlighted the need for a significant modal shift from private car to more sustainable modes including cycling, walking and use of public transport to mitigate the impacts of proposed growth. Several inter-urban corridors have been identified as requiring improved cycling infrastructure as well as improving infrastructure within the urban areas of Tunbridge Wells.

2.2.2 Tunbridge Wells Transport Strategy (2015)

The current Tunbridge Wells Borough Transport Strategy is being reviewed alongside the preparation of the Local Plan. However, the vision and many of the objectives set out in the plan remain valid. The overarching intention of the plan is to identify measures which will increase sustainable journeys across the borough:

Tunbridge Wells Borough to benefit from a network of higher quality, better integrated, sustainable transport solutions, and infrastructure, that will enable the borough to solve existing and future transport challenges, and enable a vibrant, prosperous economy and inclusive communities. By 2026, Tunbridge Wells will have a transport network which is less reliant on the private car, with a greater mode share towards walking, cycling and public transport, especially for shorter journeys. The borough will have a safer environment for all road users, and its air will be cleaner with more low emission vehicles and bicycles sharing road space.

Within this strategy, there are several key objectives which are mirrored within the LCWIP document:

- Objective 3 – Reduce congestion on the highway network, particularly on key radial routes into Royal Tunbridge Wells.
- Objective 4 – Improve travel safety across the borough especially for vulnerable road users, including cyclists, pedestrians, and equestrians.
- Objective 5 – Improve air quality, particularly within the designated Air Quality Management Area.
- Objective 6 – Increase the use of sustainable transport modes including cycling, walking and public transport.

- Objective 8 – Improve the quality of public spaces within Royal Tunbridge Wells to make the town centre more legible and attractive for pedestrians.

Priority Schemes set out in the Transport Strategy include:

- Royal Tunbridge Wells Town Centre public space improvements
- A network of key cycling routes as set out in the borough Cycling Strategy
- Speed reduction projects linked to schools and other priority locations

2.2.3 Borough Cycling Strategy (2016)

The Tunbridge Wells Borough Cycling Strategy was adopted in 2016. It was prepared to assist in the implementation of the Transport Strategy objectives above. The overall vision set out in the Cycling Strategy is: To make cycling a normal part of everyday life in the borough, by creating a safe and welcoming environment for cyclists of all ages and abilities. To realise this vision, the Strategy identifies eight Actions for delivery, which can be summarised as:

- A network of high quality cycle routes will be completed in the urban areas
- Cycle parking will be provided across the borough
- KCC & TWBC will work with partners to ensure regular maintenance of all cycle routes
- Bikeability and adult cycle training will be offered to as many people as possible
- Promotion of road safety campaigns and introduction of 20mph speed limit zones
- Ensure cycle routes are fully advertised, signposted, and mapped
- Support local cycling events

There are 11 utility routes identified within the strategy for implementation across the borough. The objectives and many of the routes identified in the Tunbridge Wells LCWIP correspond with those identified within the Cycling Strategy.

2.2.4 Tunbridge Wells LCWIP

TWBC was one of 36 pilot authorities that submitted a bid to the Department for Transport for consultant support to prepare a Borough LCWIP. TWBC was successful in this bid and has since completed a draft LCWIP which has been submitted to the Department for Transport (DfT)been receiving assistance from one of DfT's consultant panel. With this consultancy support, TWBC officers have already started work on the Tunbridge Wells LCWIP. The work to date includes the identification of 16 walking routes and 9 cycling routes within the town.

2.2.5 Council's Five Year Plan (2017 – 2022)

The Five Year Plan is the TWBC corporate strategy which focuses on future development of both the council and the borough. The overall vision of the Plan is 'to encourage investment and

sustainable growth, and to enhance the quality of life for all'. Within the plan, there are several elements which relate to the Tunbridge Wells LCWIP document. These are:

- Enhancing the public realm in the borough: An enhanced and more pleasant public realm will help to attract further tourism, and investment in local economies, and help our businesses to grow because they are in a place people want to come to, where there is a high quality of life.
- Active travel: We need to ensure every resident is supported to live a healthy lifestyle. Switching more car journeys to active travel (walking, cycling and public transport) can improve health outcomes, is good for the environment (including air quality) and will also help to support local businesses.

Work has been undertaken to identify priorities for the Council's new Five Year Plan and one of the priorities is the Green Environment. Within this priority both promoting sustainable travel (including walking & cycling) and reducing carbon emissions are set out as objectives. The need to further improve air quality is also highlighted. The new Five Year Plan will be further developed and reviewed later in 2021.

2.2.6 Kent County Council Active Travel Strategy (2017)

This strategy, produced at a County level, aims to 'make active travel an attractive and realistic choice for short journeys in Kent'. This Active Travel Strategy supports the ambitions within the Department for Transport's Cycling and Walking Investment Strategy. It sits alongside several other plans and policies within KCC and both complements and strengthens the commitments already being worked towards. A few of the main related policies are outlined below. In addition to these, this strategy will help to support District Council Plans such as Cycling Strategies and Air Quality Management Plans. KCC has set the following targets to help us achieve the County's ambition:

- 2 in 3 primary children and 1 in 3 secondary children will travel actively to school.
- the proportion of people that work within 5km of their home and actively travel to work in Kent, to increase to 40%.
- the number of people cycling along key routes monitored by the Department of Transport in Kent to increase by 10%.

2.3 Emergency Active Travel Fund (EATF) Response

In response to the COVID-19 pandemic, the Department for Transport (DfT) launched a new funding scheme known as the EATF in May 2020. The EATF invited local authorities to bid for financial support from the DfT to install design measures which either a) enable increased levels of walking and cycling through improved infrastructure, and/or b) support Social Distancing measures in busier

areas such as town centres and transport interchanges. The DfT emphasised the importance of achieving sustainable mode shift and proposing schemes that would transform conditions for walking and cycling, otherwise 'anything that does not meaningfully alter the status quo will not be funded'. The guidance did not stipulate specific design measures however the below measures were included in many of the responses to DfT:

- Light segregated cycle routes
- Footway widening
- Low Traffic Neighbourhoods
- Bus Priority Measures

Figure 2-2: EATF Light Segregation on St. John's Road (A26)

In partnership with Kent County Council (KCC), TWBC developed the below measures within their EATF Tranche 1 response. These measures, particularly the A26 and Commercial Road projects are particularly relevant to this LCWIP+ project. As with many EATF measures nationwide, the below schemes had to be developed and installed within a very short period to ensure that KCC received DfT funding. The EATF measures provided a unique opportunity to test different design arrangements and gauge initial feedback to the measures. The lessons learnt from the measures can be used in future by both KCC and TWBC to inform the development of other active travel measures.

- A26 Cycle Route: Upgrade of existing cycle facilities on the A26 between Tunbridge Wells and Tonbridge using 'light segregation'. Existing sections of marked cycle lane on the A26 were complemented with 'wands' which were installed at regular intervals to raise the visual

awareness of the cycle facilities and provide some protection for cyclists from vehicular traffic.

- Royal Tunbridge Wells High Street: The High Street was converted to northbound only access for vehicles between Mount Sion and Vale Road. The southbound vehicle lane was incorporated into a widened footway which additional outdoor space for local businesses and helped promote an environment to help achieve social distancing.
- Commercial Road (Paddock Wood): Through access to vehicular traffic was removed on Commercial Road through the installation of 'bus gates' which still permitted through access for local bus services. The scheme was intended to reduced traffic levels and therefore improve conditions for walking and cycling on the High Street. KCC has since removed the scheme in advance of the long-term closure of Church Road for utility works.
- Reynolds Lane: Access Only (Tunbridge Wells): Through-vehicle access was removed on Reynolds Lane from the shared access to Oak Hatch. Reducing the volume of vehicular traffic will improve conditions for walking and cycling along the lane.
- 20mph Speed Limit (Tunbridge Wells Town Centre): 20mph speed limits were installed on various streets within the town centre to improve conditions for walking and cycling

3 Low Traffic Neighbourhoods

3.1 Introduction to Low Traffic Neighbourhoods

Low Traffic Neighbourhoods (LTN) aim to reduce the impact of through-vehicular traffic upon streets. Although coined as Low Traffic 'Neighbourhoods' which implies a residential focus, the approach can be applied to any area where through-traffic has an adverse effect on other users. The main output of LTNs is reduced through-traffic volumes, however the approach and its benefits are significantly wider ranging than traffic management. The Prioritisation approach therefore used in the Tunbridge Wells' LTN study has incorporated a range of factors to assess the delivery of LTNs, including Mode Shift, Health, Population and Road Safety. The LTN approach fully complements the LCWIP methodology by creating a focus on more residential areas whilst the outcomes of LCWIPs generally focus on developing more strategic walking and cycling routes.

Low Traffic Neighbourhood are an increasingly popular method for encouraging increased levels of walking and cycling through the creation of low traffic environments. Indeed, the Department for Transport's recently published 'Cycle Infrastructure Design - Local Transport Note 01/20' makes specific reference to the use of low-traffic environments:

> 'Properly-protected bike lanes, cycle-safe junctions and interventions for low-traffic streets encourage people to cycle'
>
> 'Encouraging through-traffic to use main roads can provide benefits for pedestrians and residents, particularly children and vulnerable adults, as well as enabling cycling. This can be achieved through implementing measures such as turning bans, one-way streets, and by modal filtering … These measures also have the benefit of making short journeys quicker on foot or cycle compared to driving, providing a disincentive to using a car for short trips'.
>
> Cycle Infrastructure Design – Local Transport Note 01/20 (2020)

This chapter summarises the LTN Prioritisation process undertaken in Tunbridge Wells and concludes with a prioritised list of cells for future development as low-traffic neighbourhoods.

3.2 LTN Design Features + Objectives

This section provides a brief overview of the typical features and objectives of LTNs – more information is provided in the appendices. LTNs are normally enforced using 'modal filters' which are physical barriers to prevent vehicle access whilst maintaining access for pedestrians and cyclists and can also allow through access for buses and emergency services if required. Figure **3-2** provide examples of existing LTNs illustrate how public realm improvements have been developed to activate modal filters to provide wider benefits to local communities:

- Oval Triangle, LB Lambeth (top left) – LB Lambeth has developed several trail Low Traffic Neighbourhoods as part of their EATF Tranche 1 response. Their LTNs are predominantly

focussed in residential areas which are negatively affected by through-traffic; however they have also included local centres within the LTNs.

- Warburton Street, LB Hackney (top right) – This example from Hackney illustrates how modal filters can be created using more social street furniture including seating and planting
- Worship Street, City of London (Bottom left) – This example illustrates how a modal filter has been incorporated into a public realm project which extends far beyond the modal filter. The modal filter has removed a historic rat-run and been replaced with a new square including street planting and seating
- East Street, LB Waltham Forest (Bottom right) – The Mini-Holland programme has created the UK's most extensive network of LTNs incorporating many residential areas in the Borough. In addition to the LTNs, their approach has been complemented by the installation of high-quality protected cycle facilities on the main road network which has created a comprehensive cycle network in the area.

Figure 3-2: Photos from existing LTN schemes and the modal filters used to enforce the closures

The design and layout of LTNs is generally location specific and consequently many authorities have used different approaches to enforce their LTNs. Figure **3-3** illustrates how the Walthamstow Village LTN used a

mixture of one-way streets and modal filters to remove vehicular access. Figure **3-4** (overleaf) illustrates the Oval Triangle layout which was installed as part of LB Lambeth's Emergency Active Travel Fund measures.

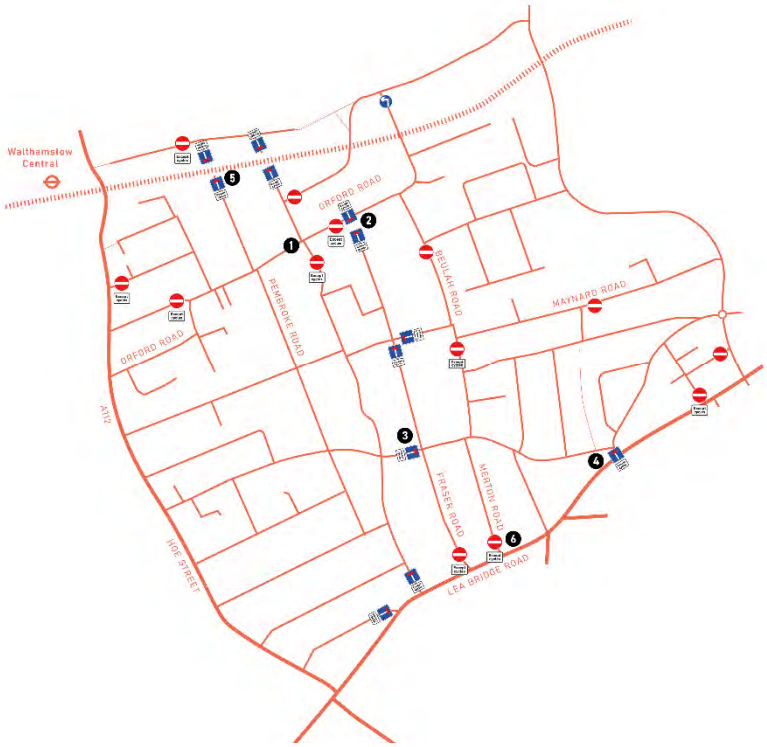


Figure 3-3: Design layout of the Walthamstow Village LTN

The Walthamstow Village trial used eight road closures for a three week period in 2017 to monitor the impacts of removing vehicular traffic and as an opportunity to experiment with the design of Orford Road and to raise awareness of walking and cycling. A majority of local streets saw a reduction in vehicular traffic flows with the highest reductions recorded on Orford Road and an 85% reduction in daily flows from 2,525 vehicles per day (vpd) to 366 vpd.

The Walthamstow Village LTN combines a variety of design features to enforce the LTN, including Pedestrian + Cycle Zones, One-Way Streets, and Street closures. The plan illustrates how the features have been installed at strategic locations through the area to minimise the impact of through-traffic in the area whilst maintaining through access for local bus services and cyclists.

Figure 3-4: Design layout of the Oval Triangle LTN

LB Lambeth has developed five LTNs in 2020 through their EATF Tranche 1 response – these LTNs had been previously identified in the Borough's LTN Strategy. The LTNs have generally been developed in areas that had well established issues with volumes of through-traffic which predated the COVID-19 Pandemic. The historic issue in the Oval Triangle was northbound and southbound vehicular traffic between the A3 and South Lambeth Road. The Borough also anticipated that construction sites located north of the neighbourhood were likely to further increase through-traffic in the area.

The Oval Triangle example has been identified because its design approach has installed modal filters exclusively on the east side of the LTN. This design approach was selected by Lambeth as it focusses on the predominant north-south through-traffic vehicle movement which originated from the south of the LTN. There are also mandatory bus lanes and a Cycle Superhighway on the A3 along the south of the LTN, installing modal filters along this side of the LTN therefore helped to reduce the existing risk of turning traffic affecting the bus and cycle lanes. Advanced signage is installed throughout the LTN and at nearby junctions in advance of the modal filters which provides plenty of warning for drivers. The benefit of this approach is that it also reduces the impact of vehicular movements on existing bus and cycle infrastructure along the A3 corridor.

3.3 Methodology

The purpose of this process was to identify and prioritise 'cells' for future development as Low Traffic Neighbourhoods. The methodology consists of four key stages which are outlined below. The prioritised list of cells provides the basis for future development of LTNs in Tunbridge Wells on the recommendation that the highest scoring cells will be developed first. Although it should be noted that the development and delivery of LTNs has followed many different approaches in the UK based on each local authority's preference.

- **Cell Identification** – the first task in developing an LTN strategy is the identification of the 'cells' which form the basis of the subsequent analysis and prioritisation
- **GIS Prioritisation Analysis** – Having confirmed the cell layout, each cell is assessed against 28 individual prioritisation factors in ArcGIS. The results of the analysis are then normalised on a scale of 0 – 1 to allow direct comparison between the results
- **Cell Porosity Assessment** – Reviews the accessibility/porosity of individual cells for vehicular traffic
- **Final Prioritisation** – the final Prioritisation process combines the GIS analysis and Deliverability assessment to produce a prioritisation ranking

3.4 Cell Identification

Movements cells were first identified about the local road hierarchy and bus routes, as well as barriers to vehicular traffic such as railway lines, rivers, and open space. Framing the movement cells by the main road network increases the likelihood of through-traffic being redirected onto these routes which are intended to accommodate higher levels of traffic compared to local streets. The aim is to identify cells that are predominantly residential and bounded by main roads, however the exercise also identified other land-use clusters such as the town centre and industrial areas. A total of 34 neighbourhood cells were identified in Tunbridge Wells and were reviewed by council officers before proceeding with the prioritisation (Figure **3-5**).

It is worth noting that the cell boundaries are drawn primarily for analytical purposes, which are open to adjustment in the delivery phase based on feasibility and other relevant considerations. The deliverability exercise also identifies individual cells that could be developed as clusters and form part of a wider low-traffic environment, this approach is common in many London Boroughs including Hackney and Waltham Forest.

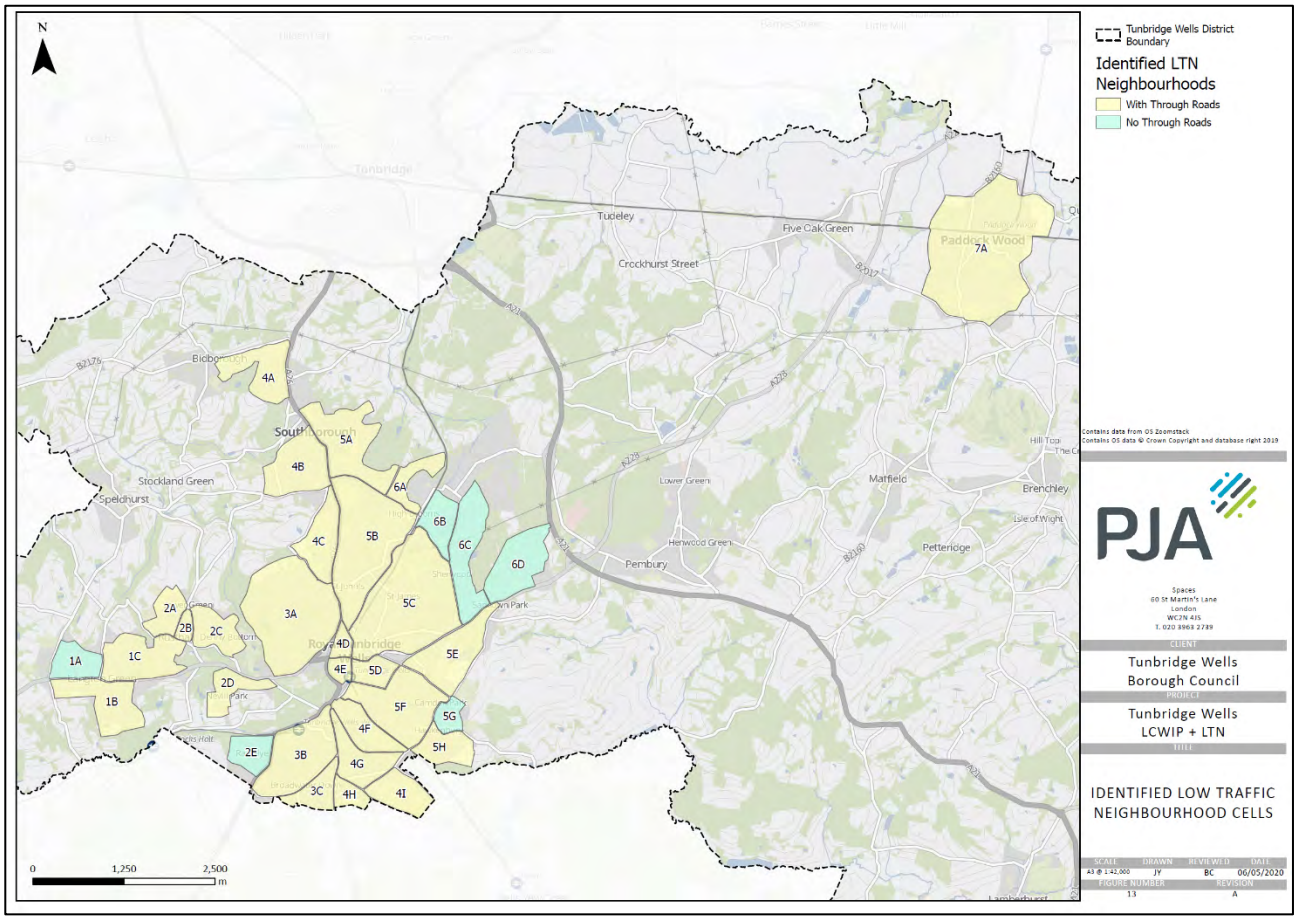


Figure 3-5: Overview of cells for Tunbridge Wells and Paddock Wood

3.5 GIS Prioritisation Analysis

The movement cells were then assessed against on 28 prioritisation factors under six categories, as detailed in Table **3-1** - Table 3-6 below. The benefits of LTNs extend far beyond reduced traffic and the intention of the Prioritisation factors therefore is to provide a range of considerations for the delivery of LTNs, including environmental, safety, and mode shift factors. A detailed explanation of the methodology for completing the GIS analysis is included in the appendices. An individual plan was produced for each of the Prioritisation factors and these are presented in the appendices.

Table 3-1: Traffic and Road Safety

Prioritisation Factor	Data Source	Priority	Relevance
1. Average Speed	OS MasterMap Highways Network – Speed dataset (link)	Higher speeds, higher priority	To assess the impact of traffic imposes in the cell.
2. Percentage of through traffic (Weekday AM Peak period)	Telemetric traffic data to be supplied by Floow	A higher percentage of through traffic, higher priority	Through traffic refers to traffic that does not originate or end inside the cell, which is the target of this exercise. This factor
3. Percentage of through traffic (Weekday Midday Peak period)			

Prioritisation Factor	Data Source	Priority	Relevance
4. Percentage of through traffic (Weekday PM Peak period)			assesses the cell's need for interventions to deter through traffic.
5. Estimated no. of total traffic across three weekday peak periods		More total traffic by area, higher priority	To assess the traffic volume within the cell.
6. Killed or Seriously Injured (KSIs) Casualties - Vulnerable Road Users (Pedestrians and Cyclists)	Department for Transport Road Safety Data (2014-2018) (link)	More casualties by area, higher priority	To assess the cell's urgency for road safety improvements.
7. Personal Injury Collisions (PICs) resulting in Slight Injuries - Vulnerable Road Users (Pedestrians and Cyclists)			

Table 3-2: Mode Shift

Prioritisation Factor	Data Source	Priority	Relevance
8. Availability of Public transport	Train station and bus stop location from the National Public Transport Access Nodes (NaPTAN) dataset (link)	Fewer public transport nodes, higher priority	To assess the level of public transport accessibility in the cell, which affects the likelihood of residents switching to public transport from car driving.
9. Length of Cycle Network Within Reach	Cycle route dataset supplied by TWBC; Routes identified in previous DfT LCWIP; Inter-urban route identified based on Propensity to Cycle Tool (PCT)	More cycling infrastructure by area, higher priority	The availability of cycle infrastructure within the cell could affect the level of cycle uptake.
10. Pedestrian Movement	Space Syntax OpenMapping (link)	Higher pedestrian connectivity by area, higher priority	The level pedestrian movement could affect the walking potential of the cell.
11. Propensity to Cycle (PTC) (Government target scenario)	Propensity to Cycle Tool (PCT) - Government Target (equality) (link), LSOA-level lines data	Higher PTC by area, higher priority	PTC represents the potential growth in the no. of cyclists traveling on roads within the cell. This demonstrates the cell's potential demand for cycle-friendly infrastructure.
12. No. of commuters with journey to work under 5km	Derived from NOMIS Location of usual residence and place of work (OA level) (WF01BEW) (link)	Higher number of commuters by area, higher priority	Journeys under 5km are generally more likely to be made by cycling. This factor assesses the potential number of commuters who can switch to cycling, if not already done so.

Table 3-3: Population

Prioritisation Factor	Data Source	Priority	Relevance
13. Workspace population	NOMIS Population (Workplace population) (WP101EW) (link)	Higher population density, higher priority	To assess the amount of population which will benefit from this exercise. Cells with higher population density will require more pedestrian-friendly public realm.
14. Residential population	NOMIS Usual resident population (KS101EW) (link)		
15. Number of commuters start or end in cell - journey to work	Derived from NOMIS Location of usual residence and place of work (OA level) (WF01BEW) (link)	Higher number of commuters by area, higher priority	

Table 3-4: Health

Prioritisation Factor	Data Source	Priority	Relevance
16. Index of Multiple Deprivation (IMD) Decile – Health Deprivation and Disability Domain	DCLG English Indices of Deprivation 2015, File 2 Domains of deprivation (link)	Lower decile ranking, higher priority	The general health of residents living within the cell affects its need for interventions that encourage active travel.
17. Male life expectancy	Public Health England Local Health tool (MSOA level) (link)	Lower life expectancy, higher priority	
18. Female life expectancy			
19. Percentage of children obese at Reception Year		Higher percentage, higher priority	
20. Percentage of children obese at Year 6			
21. Asthma Prevalence	House of Commons Library – Disease Prevalence in England: Local Estimates (link)	Higher prevalence, higher priority	Prevalence of asthma in the cell represents the health impact which traffic has potentially contributed. It demonstrates the urgency for traffic reduction interventions to the cell.
22. Size of Open Space	OS Open Greenspace dataset (link)	Less open space and play areas by area, higher priority	The availability of open space reflects the cell's need to reclaim road space for recreational use.
23. No. of Play Areas			

Table 3-5: Air Quality

Prioritisation Factor	Data Source	Priority	Relevance
24. PM10 concentrations	DEFRA 2015-based background mapping data (link)	Higher concentration, higher priority	The concentration of air pollutants affects the cell's urgency for traffic reduction interventions.
25. PM2.5 concentrations			
26. NO2 concentrations			

Table 3-6: Trip Attractors

Prioritisation Factor	Data Source	Priority	Relevance
27. No. of Schools (weighted by the number of pupils)	Dataset to be supplied by TWBC	More school pupils by area, higher priority	To assess the cell's need for safer roads to encourage and allow pupils to travel on foot.
28. No. of Amenities	Healthcare Facilities NHS Choices – Location datasets for pharmacies, hospitals, clinics and GPs practices and surgeries (link) Cultural Infrastructure Datasets in various categories supplied by TWBC Sport Facilities Sports England – Active Places facilities data for the location of health and fitness, sports halls,	More amenities by area, higher priority	The more amenities, the denser the pedestrian movements. This reflects the cell's need for more pedestrian-friendly public realm.

Prioritisation Factor	Data Source	Priority	Relevance
	swimming pools, artificial and grass pitches and tennis courts, etc.(link)		

3.6 Cell porosity

Each cell's current porosity percentage, which represents the cell's current accessibility to through-traffic has also been indicated in the scoring spreadsheet. This is an important factor in the development of LTNs when considering the number of interventions required to remove through-traffic. The existing porosity of cells can also influence which areas are targeted for the installation of LTNs. Cells with lower porosity typically require less measures to fully remove through-traffic which reduces cost and potentially increases feasibility – this has been illustrated overleaf in Figure **3-6**. Whilst more porous cells are likely to require more interventions but are likely to have a more significant impact upon through traffic and conditions in the affected local streets.

To determine the current porosity of a cell, all Junctions (1) within each cell were given a score based on the number of turning movement permitted as follows:

Table 3-7: Junction scoring method in Baseline Scenario

	Internal Junction	External Junction (on cell boundary, disregards turns unrelated to the cell)
T-junction (3-arm)	6	4
Crossroad (4-arm)	12	6
Roundabout	2 (each entry/ exit arm)	2 (each entry/ exit arm)
Mini roundabout	Treat same as T-junction or Crossroad	Treat same as T-junction or Crossroad

The calculation of porosity value requires location dataset of all traffic management measures (i.e. modal filters, one-way road, reduced access junction, point closure and retrofitted cul-de-sacs, etc.) in the project boundary. Such dataset has been obtained via the OS MasterMap Highway Network – Routing and Asset Management dataset. Google Street View and Satellite images was used to verify the outputs from the OS dataset. The scores of all junctions within each cell were then summarised to obtain a total score for each cell, for both scenarios. By calculating the percentage difference between the baseline and existing scores, a porosity value was be generated for each cell. Figure 2 shows the scoring method in graphic illustration.

[1] Only junctions on through roads would be included. Junctions within or leading to cul-de-sacs, dead end roads and loop stemming from the same road would be disregarded.

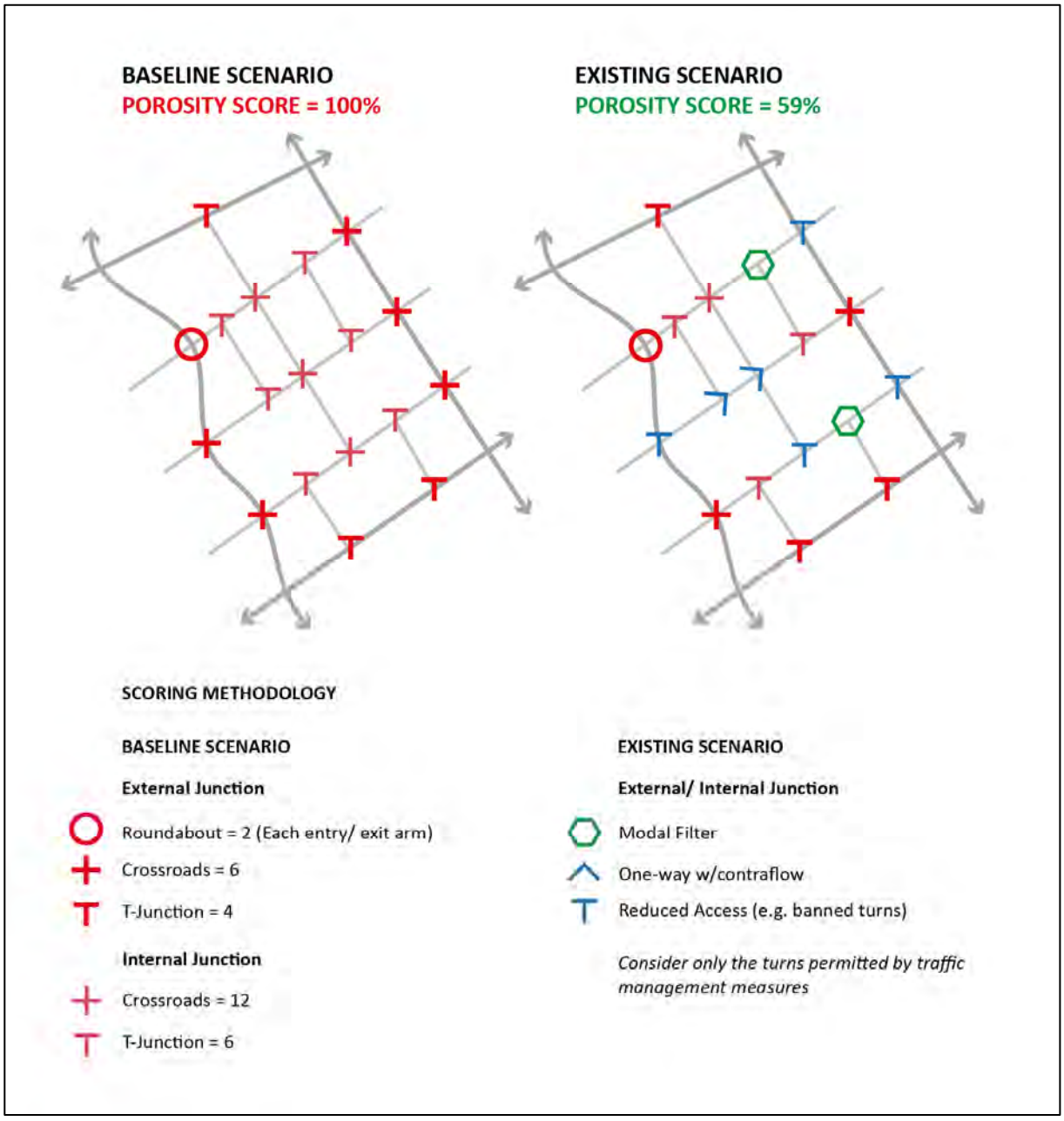


Figure 3-6: Illustration showing junction scoring method for Baseline and Existing Scenario

3.7 Normalisation and Ranking

The score for each prioritisation factor was normalised to a range between 0 and 1 to enable easy comparison against the results. Table 3-8 summarises the Prioritisation results against the six scoring categories that were used in the LTN process. These figures were then combined to produce a final Prioritisation score for each cell, and these were then ranked in the final column. These results are also summarised in more detail in the appendix with individual cell assessments.

Label	Traffic	Mode Shift	Population	Health	Air quality	Trip Attractors	Total Score	Ranking
1A	0.15	0.19	0.10	0.53	0.09	0.02	0.24	31
1B	0.14	0.14	0.02	0.53	0.00	0.10	0.22	33
1C	0.33	0.25	0.09	0.67	0.18	0.07	0.35	13
2A	0.27	0.15	0.23	0.52	0.15	0.04	0.29	24
2B	0.40	0.20	0.34	0.71	0.20	0.00	0.40	10
2C	0.06	0.14	0.19	0.69	0.25	0.05	0.29	23
2D	0.39	0.31	0.00	0.80	0.20	0.00	0.40	9
2E	0.09	0.12	0.11	0.57	0.23	0.23	0.26	30
3A	0.18	0.16	0.18	0.58	0.41	0.14	0.31	19
3B	0.26	0.18	0.27	0.55	0.33	0.10	0.33	17
3C	0.33	0.16	0.12	0.39	0.25	0.00	0.26	29
4A	0.35	0.13	0.03	0.52	0.21	0.00	0.29	25
4B	0.48	0.26	0.34	0.58	0.36	0.12	0.42	7
4C	0.26	0.30	0.12	0.35	0.58	0.51	0.33	16
4D	0.49	0.89	1.00	0.57	0.83	0.49	0.67	1
4E	0.25	0.61	0.67	0.57	0.77	0.50	0.52	3
4F	0.33	0.18	0.20	0.35	0.51	0.11	0.30	21
4G	0.31	0.12	0.12	0.39	0.38	0.05	0.27	27
4H	0.57	0.19	0.06	0.34	0.17	0.04	0.30	20
4I	0.51	0.01	0.03	0.23	0.28	0.00	0.23	32
5A	0.12	0.16	0.13	0.59	0.46	0.10	0.30	22
5B	0.41	0.31	0.34	0.58	0.79	0.21	0.46	5
5C	0.62	0.39	0.40	0.57	0.81	0.10	0.52	2
5D	0.22	0.26	0.45	0.38	0.75	0.05	0.34	14
5E	0.40	0.19	0.04	0.46	0.57	0.07	0.34	15
5F	0.32	0.19	0.21	0.43	0.50	0.10	0.32	18
5G	0.24	0.19	0.25	0.37	0.35	0.00	0.26	28
5H	0.27	0.09	0.06	0.51	0.31	0.02	0.27	26
6A	0.17	0.23	0.26	0.68	0.69	0.00	0.38	11
6B	0.52	0.29	0.29	0.69	0.90	0.04	0.51	4
6C	0.26	0.27	0.26	0.72	0.70	0.08	0.43	6
6D	0.26	0.10	0.03	0.70	0.60	0.12	0.36	12
7A	0.33	0.19	0.13	0.78	0.48	0.05	0.41	8

Table 3-8: LTN Individual Cell Scores

3.8 LTN Future Development

Figure 3-7 illustrates the distribution of results across the LTN cells and highlights a cluster of higher scoring cells in the centre of Tunbridge Wells. Three clusters of cells have been identified and the recommendation is that these clusters form the basis of initial LTN development in Tunbridge Wells. A clustered approach ensures that the benefits of the LTN are shared locally in those areas, particularly for local walking and cycling networks which can be further developed around low-traffic routes. Developing clusters of cells also ensures that traffic management is co-ordinated to reduce the risk of negative knock-on effects on neighbouring cells.

- **Cluster A (Cells 4D + 4E):** These two small cells are located west of the train station/town centre and bound by St. John's Road/ Grosvenor Road/ Mount Pleasant Road.
- **Cluster B (Cells 5B,6B and 6C):** This cluster has been recommended as Cells 2, 4 and 6 are bound by the main roads of Pembury Road and Camden Road as well as the railway line. The recommendation to develop the cells concurrently reduces the risk of traffic displacement in the area onto the adjoining cells.
- **Cluster C (Cell 5B):** Cell 5 is the largest single cell identified and therefore recommended for delivery as its own LTN. Cluster C is bound by St. John's Road, Yew Tree Road, and railway line.

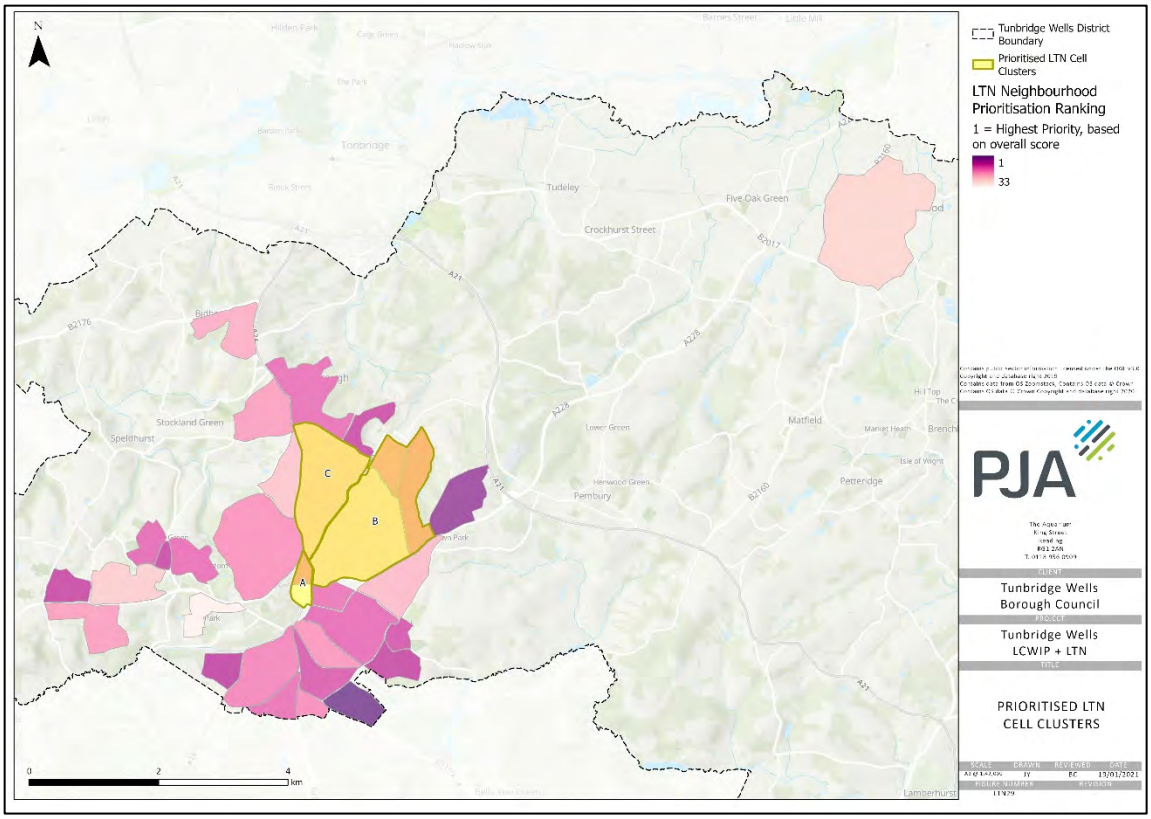


Figure 3-7: Summary of LTN Cell Clusters

4 LCWIP+

4.1 Introduction to Local Cycling and Walking Infrastructure Plans (LCWIPs)

Local Cycling and Walking Infrastructure Plans (LCWIPs), as set out in the Government's Cycling and Walking Investment Strategy (2017), are a new, strategic approach to identifying cycling and walking improvements required at the local level. LCWIPs provide a long-term approach to developing local cycling and walking networks, usually over a 10 year period. LCWIPs are intended to assist Local Authorities to:

- identify priority cycling and walking infrastructure improvements for future investment in the short, medium, and long term.
- ensure that consideration is given to cycling and walking within both local planning and transport policies and strategies; and
- make the case for future funding for walking and cycling infrastructure.

4.1.1 LCWIP process overview

The DfT technical guidance for authorities developing an LCWIP sets out a methodical approach to the planning and delivery of cycling and walking infrastructure. It breaks down the process into six steps. These can be viewed in Table 4-1 below.

LCWIP stage	Name	Description
1	Determining Scope	Establish the geographical extent of the LCWIP, and arrangements for governing and preparing the plan.
2	Gathering Information	Identify existing patterns of walking and cycling and potential new journeys. Review existing conditions and identify barriers to cycling and walking. Review related transport and land use policies and programmes.
3	Network Planning for Cycling	Identify origin and destination points and cycle flows. Convert flows into a network of routes and determine the type of improvements required.
4	Network Planning for Walking	Identify key trip generators, core walking zones and routes, audit existing provision and determine the type of improvements required.
5	Prioritising Improvements	Prioritise improvements to develop a phased programme for future investment.
6	Integration and Application	Integrate outputs into local planning and transport policies, strategies, and delivery plans.

Table 4-1: LCWIP stages from DfT technical process guidance

LCWIPs should be evidence-led, and comprehensive. An LCWIP should identify a pipeline of investment so that over time, a complete cycling network is delivered at an appropriate geography (see step 1 – determining scope) and that walking and cycling improvements are delivered coherently, within core walking zones (see step 4 – planning for walking). The goal of an LCWIP should be to grow the use of cycling and walking, which means looking at routes and areas where more people could choose these modes in preference to other means of travel. Therefore, an

LCWIP should consider travel demand regardless of mode, rather than looking just at existing walking and cycling trips.

The scope for the cycling element and walking elements need not be the same, but there can be efficiencies where cycling infrastructure also considers walking and vice-versa and planning them together can avoid one mode compromising the other. The LCWIP should prioritise improvements so that the programme can be delivered in a manageable way, potentially tied to complementary funding or other key milestones.

4.2 LCWIP Scope

For the purposes of this study, the LCWIP stage consists of two key tasks:

- Review of the walking and cycling networks produced in Tunbridge Wells' 2019 LCWIP to identify any opportunities for further development of the previously identified routes
- LCWIP of Paddock Wood to review existing conditions for walking and cycling in the town

The design recommendations from the LCWIPs have been developed in tandem with the LTN and Inter-Urban tasks to ensure that the proposals are integrated with each other. This is particularly relevant to the Inter-Urban Routes and developing alignments that connect with the LCWIP networks.

4.3 LTN + LCWIP Interaction

The objective of this study is to develop a comprehensive strategy for active travel encompassing both the LCWIP and LTN approaches. The two approaches are inherently compatible and mutually beneficial however strategies are not often developed in tandem. Combining the two approaches through this project will create a framework for the delivery of measures that cover both strategic walking and cycling infrastructure through the LCWIP and developing neighbourhood-led solutions through the LTN. Developing the strategies concurrently will also enable TWBC to develop a programme that fuses the approaches, for example LCWIP cycle routes could be aligned through proposed Low Traffic Neighbourhoods to enhance cycle connectivity to residential areas whilst also providing a strategic onward route to the town centre.

4.4 Tunbridge Wells 2019: LCWIP Review

TWBC was one of several pilot authorities that submitted a bid to the Department for Transport for consultancy support to help prepare a LCWIP. TWBC was successful in this bid and has since completed a draft LCWIP which has been submitted to the Department for Transport (DfT) and TWBC are currently awaiting feedback. Figure **4-2** outlines the geographic scope of the Tunbridge Wells LCWIP.

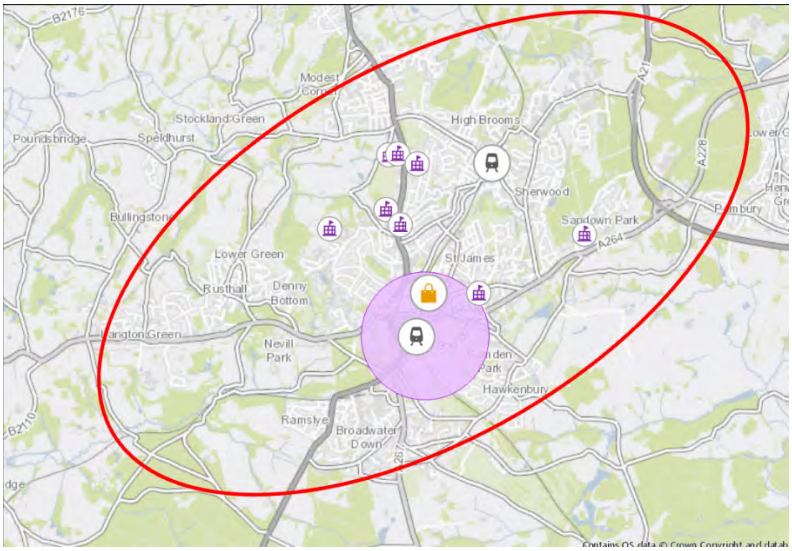


Figure 4-2: Tunbridge Wells LCWIP – Geographic Scope

4.4.1 Tunbridge Wells LCWIP - Network Development

A network review was undertaken of the previous LCWIP to better understand the walking and cycling networks and how these could be integrated into this project, specifically for the Inter-Urban Route and LTN aspects. Figure **4-3** and Table **4-2** outline the LCWIP Cycling Network which comprised of nine proposed alignments each radiating out from the town centre.

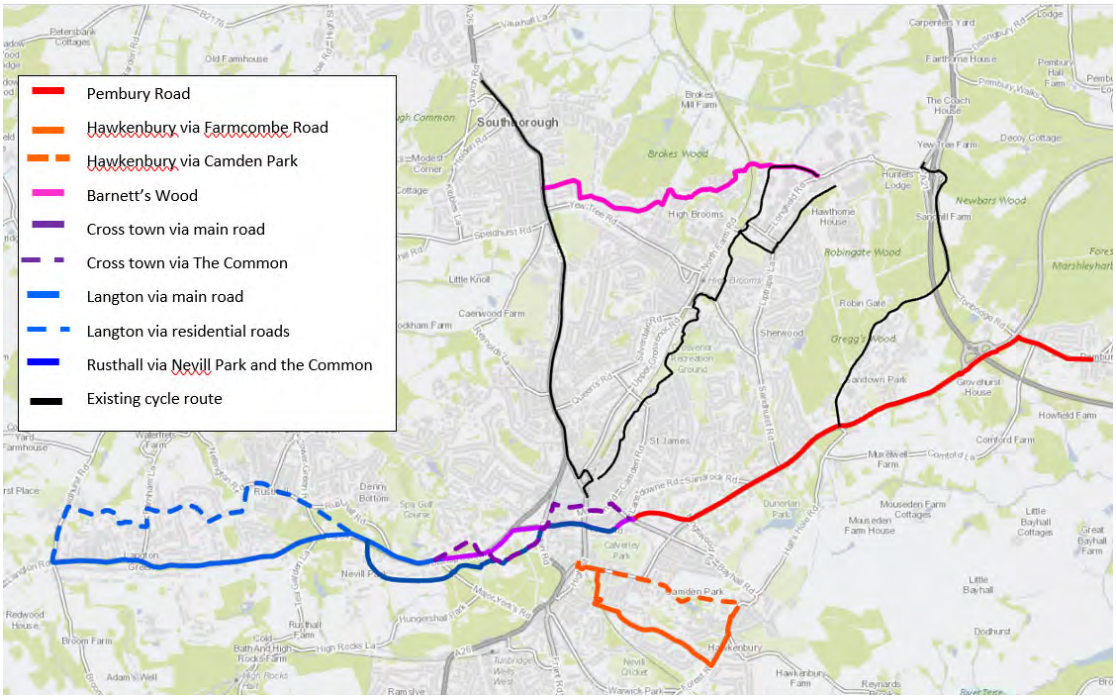


Figure 4-3: LCWIP Proposed Cycle Network

A multi-criteria Prioritisation process was completed for each proposed route and the final ranked scores are summarised in Table **4-2**Figure **4-2**. The Prioritisation included ten assessment criteria,

including: forecasted increase in cycling trips, design scope and feasibility, Cost Estimate, Impact on Pedestrians, and Catchment Area.

Route Ranking	Route Name	Total weighted Score (Max Score = 270)
1	Hawkenbury via Camden Park	216
2	Hawkenbury via Farmcombe Road	206
3	Pembury Road	205.5
4	Cross Town via Commons	200.4
5	Barnett's Wood	200.1
6	Cross Town on Road	193.2
7	Rusthall via Commons	184.7
8	Langton back roads	180.6
9	Langton via main road	156.1

Table 4-2: Tunbridge Wells LCWIP Cycle Route Prioritisation

4.4.2 LCWIP Cycle Network Development

The 2019 LCWIP Cycling Network was assessed against the Propensity to Cycle Tool outputs to identify any opportunities for additional cycling routes in Tunbridge Wells. The PCT analysis was completed using the 'E-bike' scenario which assumes Dutch levels of cycling to work (c.22% of all commuter trips by bike) and includes improved access to e-bikes. This exercise focussed on identifying routes within Tunbridge Wells and routes which would then connect onwards with proposed Inter-Urban Routes.

Having reviewed the outputs from the 2019 LCWIP, an additional desktop exercise was undertaken to identify any additional routes which could complement both the 2019 LCWIP and the proposed Inter-Urban routes from this project. The additional routes were identified by overlaying the Straight-Line PCT analysis over the 2019 LCWIP Network to enable identification of gaps or opportunities for additional routes. Consequently, each of the additional routes connects with either an Inter-Urban Route and/or 2019 LCWIP route. Figure **4-4** compares the Straight Line PCT outputs against the Tunbridge Wells LCWIP network.

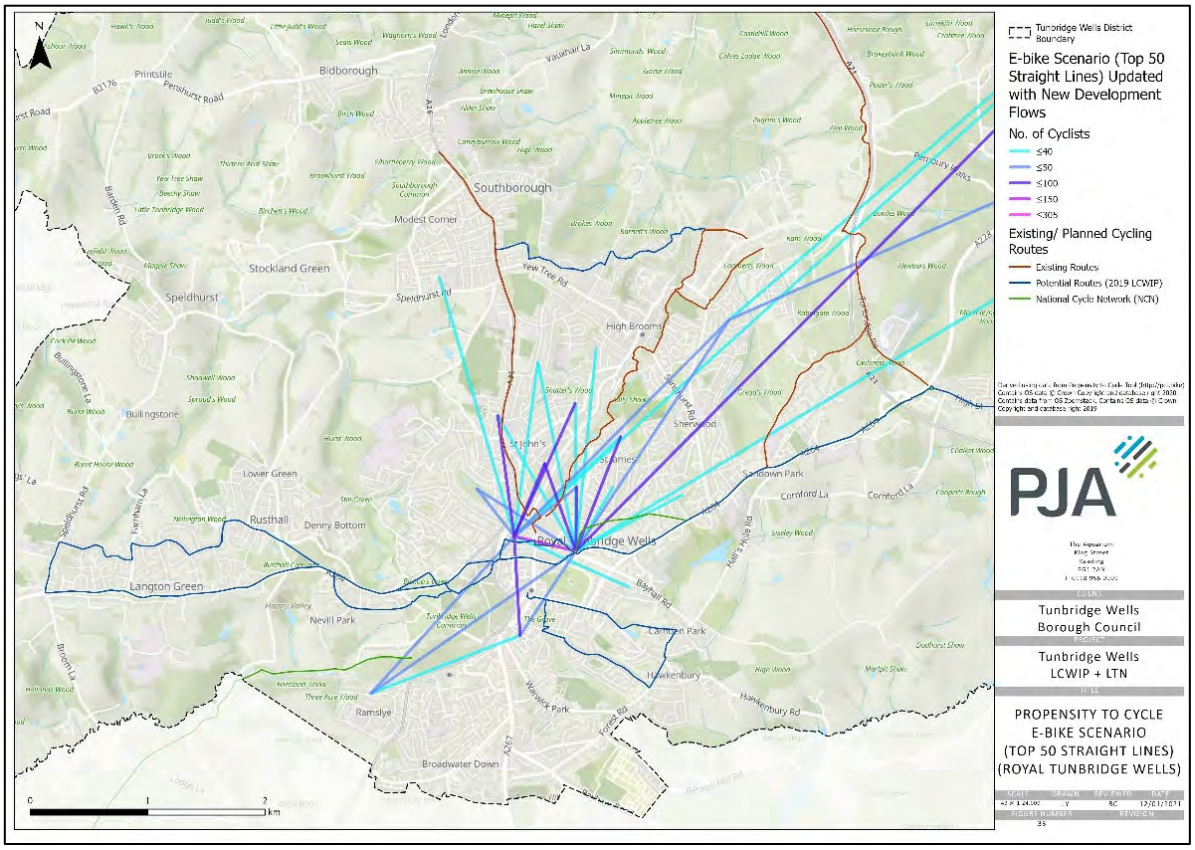


Figure 4-4: Straight-Line PCT analysis of Tunbridge Wells compared against LCWIP cycling network

The combined outputs identify potential additional alignments to the north of the town centre which were then applied to the local road network in the plan below. These routes were subsequently audited on site using the Route Selection Tool and are shown in Figure **4-5**:

- Sandhurst Road/Birken Road (between Pembury Road and Dowding Way)
- Sandhurst Road (between Birken Road and North Farm Road)
- North Farm Road (between Sandhurst Road and Barnett's Wood)
- Queen's Road/ Silverdale Road (between St. John's Road and Upper Grosvenor Road)
- Yew Tree Road (between St. John's Road and North Farm Road)

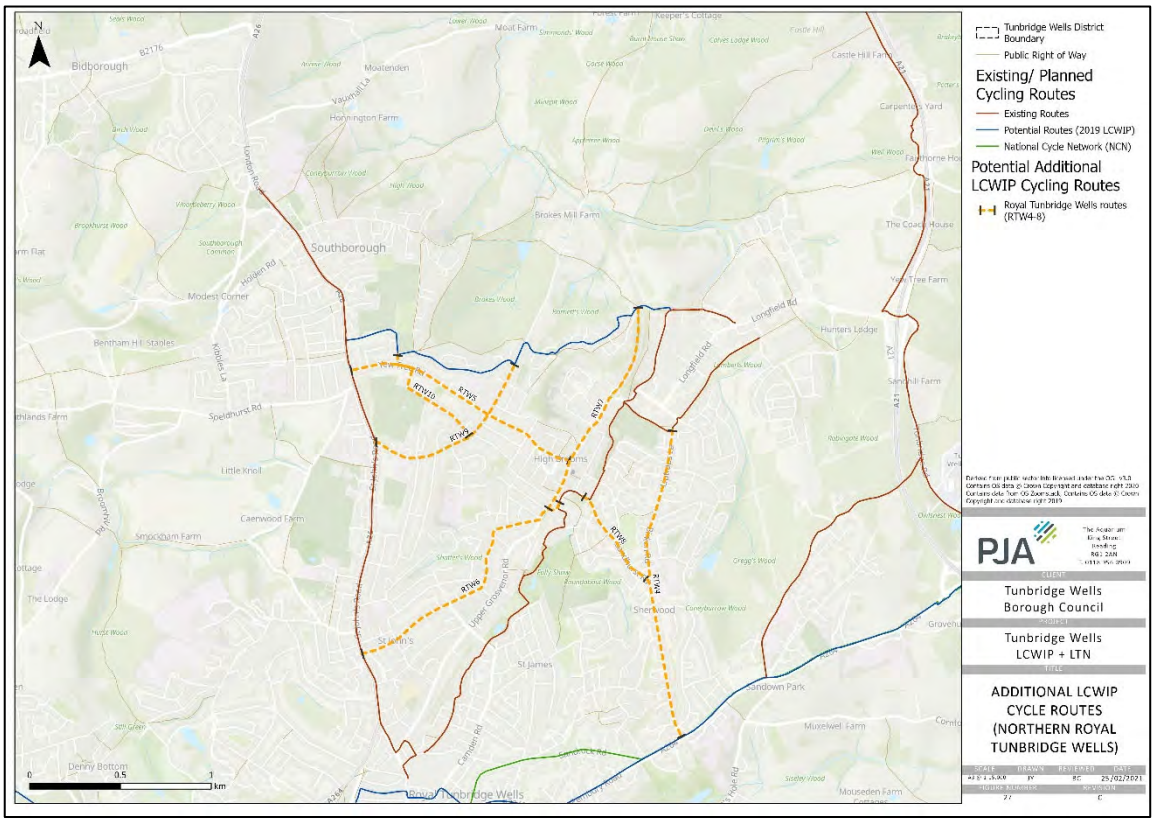


Figure 4-5: Additional LCWIP Cycling Routes in Tunbridge Wells

4.4.3 Additional RST Audits and Recommendations

The LCWIP network review identified five additional cycle routes which were audited using the Route Selection Tool. The key findings from the RST audits have been summarised below and are supported with images from the site visits to help illustrate the key points (Figure **4-6**):

- **Through-Traffic** – The North Farm Road tunnel under the railway line is an important access route to the retail and industrial parks on Longfield Road. Consequently, the route is a well-established rat-run which created congestion and uncomfortable conditions for cycling on

North Farm Road, and to a lesser extent on Upper Grosvenor Road. Long queues of vehicles were observed on the approaching roads to the railway tunnel which made it difficult to safely cycle on street as there was very little room to manoeuvre safely past vehicles.

- **Vehicle Speeds + Volumes** – Cycling on-street was quite uncomfortable on the identified routes due to the proximity to vehicular traffic and the speeds that some vehicles travelled – particularly on Sandhurst Road and Yew Tree Road.
- **Gradient** – There is a pronounced east-west gradient in the area bound by the railway line and St. John's Road which presented a slight challenge for cycling uphill on Yew Tree Road
- **Kerbside Activity** – On-street parking reduced the carriageway width in each of the streets which is unsurprising given their residential nature. The combination of parked vehicles and lack of cycle facilities increased the potential for user conflict between vehicles and cyclists on these routes because there is little room for cyclists to pass the vehicles at a safe distance.

Figure 4-6: Photos from RST Audits of Additional routes in Tunbridge Wells: Yew Tree Road (Top images), High Brooms Road (Bottom Left) and North Farm Road (Bottom Right)

The main issues identified during the RST assessments were related to interaction with vehicular traffic, particularly on Sandhurst Road and Yew Tree Road leading to crossings of the railway line. Based on these findings, two approaches have been developed, both of which are focussed on reducing exposure of cyclists to vehicular traffic to improve the RST scores related to Comfort, Safety and Critical Junctions. Whilst these options have different scopes and alignments, the long-

term ambition should be to deliver both sets of proposals to enhance the overall quality and coverage of the town's cycling network

a **Protected Cycle Facilities**: the LTN aspect of this study has identified two 'movement cells' in the area: 1) bound by St. John's Road, Railway Line and Yew Tree Road and 2) Sandhurst Road, Railway Line, Pembury Road and Calverley Park Gardens. The LTN cell layouts would maintain vehicle access on the identified LCWIP cycling routes and it is assumed therefore that flows of vehicular traffic on these routes will remain similar to current flows which would be too high for mixing with cyclists. Protected cycle facilities would therefore be recommended on these routes where feasible:

- **North Farm Road (between Sandhurst Road and Barnett's Wood)** – North Farm Road (between Sandhurst Road and the Railway viaduct) is a busy route for vehicles travelling east-west in the town. There are limited opportunities to traverse the railway line which explains why this route is popular with drivers. The current conditions for cyclists are exacerbated by kerbside activity from the adjoining units along the street which increase potential user conflict between drivers and cyclists.
- The recommendation on North Farm Road is that an alternative route is developed on the eastern side of the railway line following the existing '21st Century Way' alignment of High Brooms Playing Fields/ Clifton Road/ Sandhurst Road/ Temple Way/ Grosvenor + Hilbert Park. Whilst this route provides shared use facilities on Clifton Road/Sandhurst Road/ Template Way which separate cyclists from vehicular traffic, the recommendation is that these facilities are upgraded in future to comply with LTN 1/20 guidance which recommends against shared use treatments in more urban settings.
- **Queen's Road/ Silverdale Road** – this would provide a parallel alignment to Upper Grosvenor Road following residential streets between St. John's Road and Upper Grosvenor Road. The main design change would require installation of northbound contraflow cycle facilities on Silverdale Road between Stephen's Road and Woodland Road.
- **Sandhurst Road South/Birken Road/Liptraps Lane (between Pembury Road and Home Farm Lane)** – Sandhurst Road has the potential to form an important east-west cycle link which would connect the existing cycle facilities on Pembury Way with High Brooms and Dowding Way. The combined wide carriageway and footways should provide sufficient scope to install protected cycle facilities along the route.
- The recommendation on Queen's Road/Silverdale Road and Sandhurst Road is to install cycle tracks at footway-level with minor kerb segregation to delineate space between pedestrians and cyclists (examples provided in Figure **4-7**). A similar approach is also recommended on Birken Road between Sandhurst Road and Home Farm Lane with protected cycle facilities installed at footway level. The junction of Liptraps Lane/ Home Farm Lane/ Oakwood Close would need to be upgraded to provide a dedicated transition for cyclists as cyclists would be

turning across the predominant flow of vehicles on Liptraps Lane/Lambert Road. The route would then use Home Farm Lane and Public Footpath WB8 which then connects with the existing shared use facilities on Longbridge Road. The

- **Sandhurst Road North (between Birken Road and North Farm Road)** – The northern section of Sandhurst Road has reasonably wide carriageway and footways which combined should have sufficient space to enable the installation of protected cycle facilities. It is recommended that side-entry junctions along this section of Sandhurst Road would also be upgraded to continuous footway layouts as part of this design.
- As per Sandhurst Road South, the recommendation would be to install cycle tracks at footway level with minor kerb segregation to separate pedestrians and cyclists.
- **Yew Tree Road (between St. John's Road and North Farm Road) –** There are several key challenges to improving cycle comfort on Yew Tree Road, including: on-street parking, large number of private driveway accesses, and a narrower section of carriageway between Powder Mill Lane and Gordon Road.
- The recommendation is that the existing LCWIP Barnett's Wood route is developed combined with a parallel alignment south of Yew Tree Road (as recommended below).

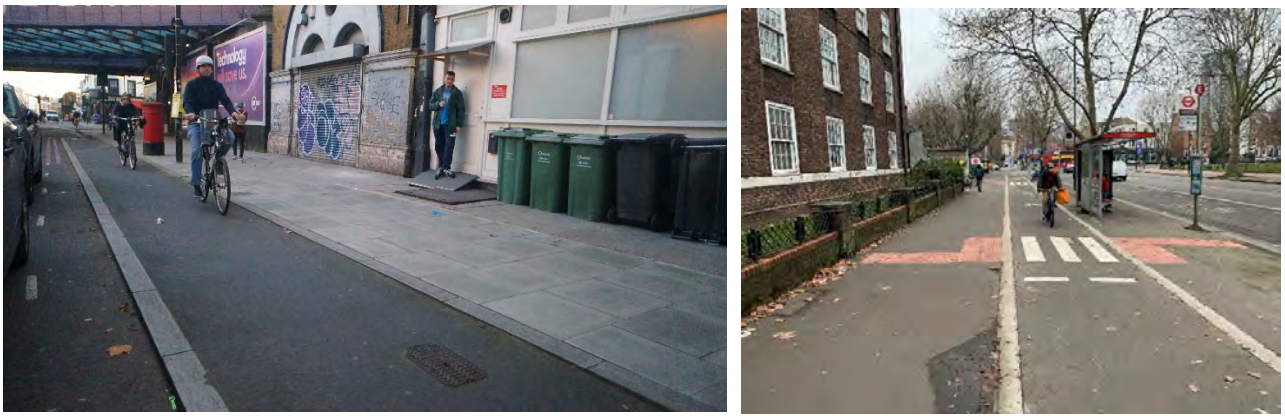


Figure 4-7: Example of stepped track on Cycle Superhighway 6 in Camden (left) and Kennington Road combined footway/cycle path (Right)

b **Parallel Alignments**: An alternative/parallel approach to providing facilities on the main routes would be to develop parallel LCWIP routes within the proposed LTN cells which would provide a low-traffic alternative route. This approach is dependent upon the installation of the Low Traffic Neighbourhoods recommended in this report, however relatively these routes would require less dedicated infrastructure and would be therefore easier to deliver than the potentially more complicated routes on the main roads. This approach is akin to TfL's Quietways approach which championed the installation of cycle routes on routes with lower volumes of vehicular traffic, focussed particularly on residential streets, and off-road links (see Figure **4-8**).

Quietways were a key component of TfL's cycle network strategy and were recognised by the London Mayor as a quicker and more affordable means of rapidly developing their cycle network, compared to delivering cycle routes on main roads which invariably took longer to develop and install. The examples below illustrate typical design features used on Quietway routes, namely: road markings and wayfinding, and junction treatments to ensure cycle priority at junctions.

Figure 4-8: Example of Quietway road markings (left) and example of Quietway 1 which is routed through residential streets (Right)

On this basis, alternative alignments have been identified which would follow parallel alignments to previous identified routes.

- **Powder Mill Lane** – the key areas of focus on this alignment would be upgrading the junctions with St. John's Road (A26) and Yew Tree Road. The existing layouts of these junctions needs upgrading for both walking and cycling – both junctions currently have wide corner radii, street clutter and inadequate pedestrian crossing facilities. In addition to improving the junctions, consideration should be given to promoting a School Street option alongside the LTN proposals outside of St. Matthew's School.
- **Chestnut Avenue/ The Ridgeway –** This would provide a short link connecting the proposed LCWIP Barnett's Wood Route on Hillcrest towards Powder Mill Lane and the town centre.

These alternative routes would connect with the surrounding main road network and with the previously proposed LCWIP cycle route on Hillcrest.

4.5 Paddock Wood LCWIP

A standalone LCWIP was undertaken for Paddock Wood focussing predominantly on the existing town centre however the preferred walking and cycling networks were developed to ensure integration with the surrounding developments sites that envelop Paddock Wood, and to reflect the proposed Inter-Urban Routes. Given the compact nature of the town, the recommendations for walking and cycling improvements overlap at many locations.

4.6 Data Collection

The focus of the Data Collection (LCWIP Stage 2) is to set the local context for the development of the walking and cycling networks. Given the compact nature of Paddock Wood, the focus of the network development was understanding how the surrounding developments might impact upon the town and how the LCWIP network would interface with these. Figure **4-9** summarises the local context in Paddock Wood and identifies the key destinations and future trip generators in the area including Five Oak Green and Tudeley. The plan illustrates how there is a large volume of development proposed around the town which will significantly alter the size of Paddock Wood and how the town operates.

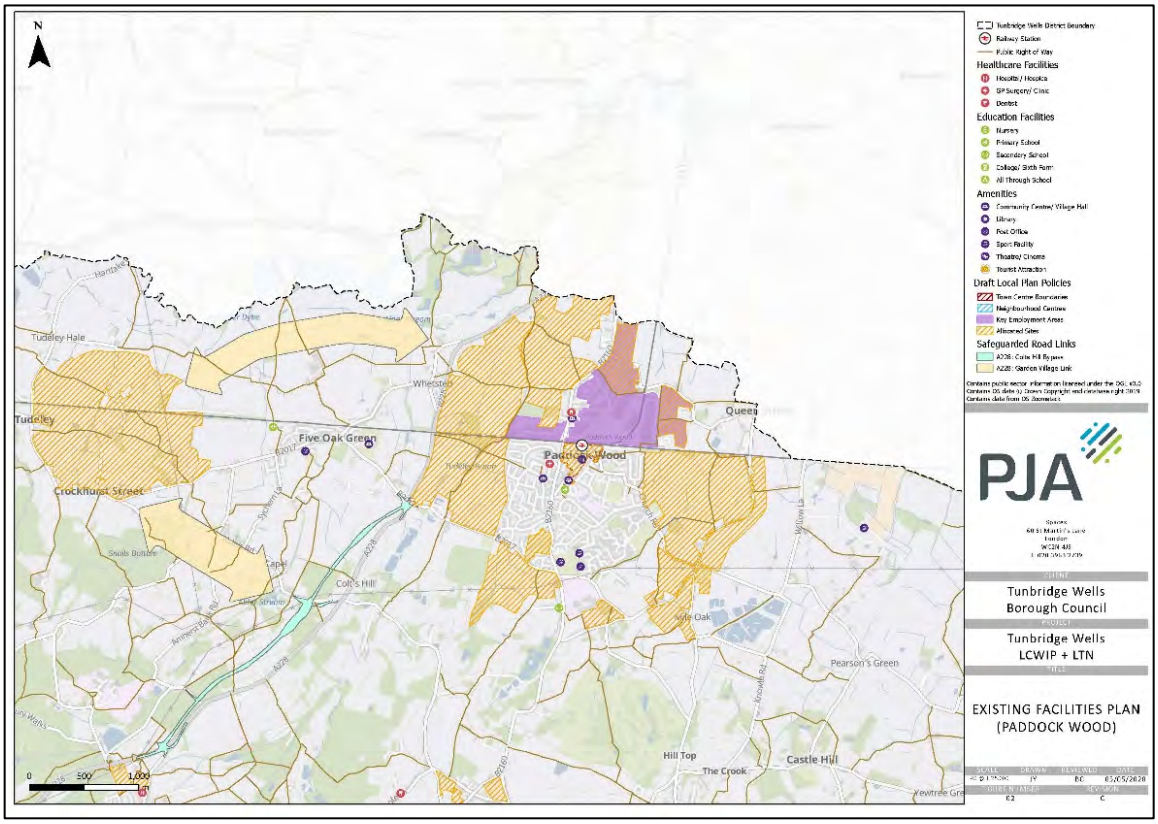


Figure 4-9: Paddock Wood Context Plan

The compact nature of Paddock Wood combined with its residential street layout lends itself to creating an attractive environment for walking and cycling. Most of the street layout in Paddock Wood is comprised of residential cul-de-sacs which significantly reduces the porosity of the town for both cycling and vehicular traffic. The disbenefit of this layout is that both cyclists and through-traffic are concentrated on the few through-routes in the town, namely Church Road, Commercial Road, Maidstone Road, Old Kent Road and Warrington Road. A key consideration in the network planning process therefore was how to address the issue of the porosity in Paddock Wood and developing a cycling network in this context. This chapter concludes with a recommendation for reducing through-traffic access in Paddock Wood which would help significantly with improving conditions for walking and cycling.

4.7 Network plan for cycling

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

- Straight-Line Networks (Figure **4-10**)– shows direct paths between Origin-Destinations which gives an overview of the key desire lines for cycling flows
- Applied Networks (Figure **4-11**) – the second stage applies the straight desire line to the existing road network to provide a more detailed summary of where increased cycle flows would take place on the local network

We used the Propensity to Cycle Tool to identify the key desire lines for commuter trips in the area and factored in future trips which are likely to be generated by the proposed developments. The plan below presents the PCT e-bike straight line scenario with the future trips incorporated. The plan identifies a cluster of routes in Paddock Wood and onto Five Oak Green.

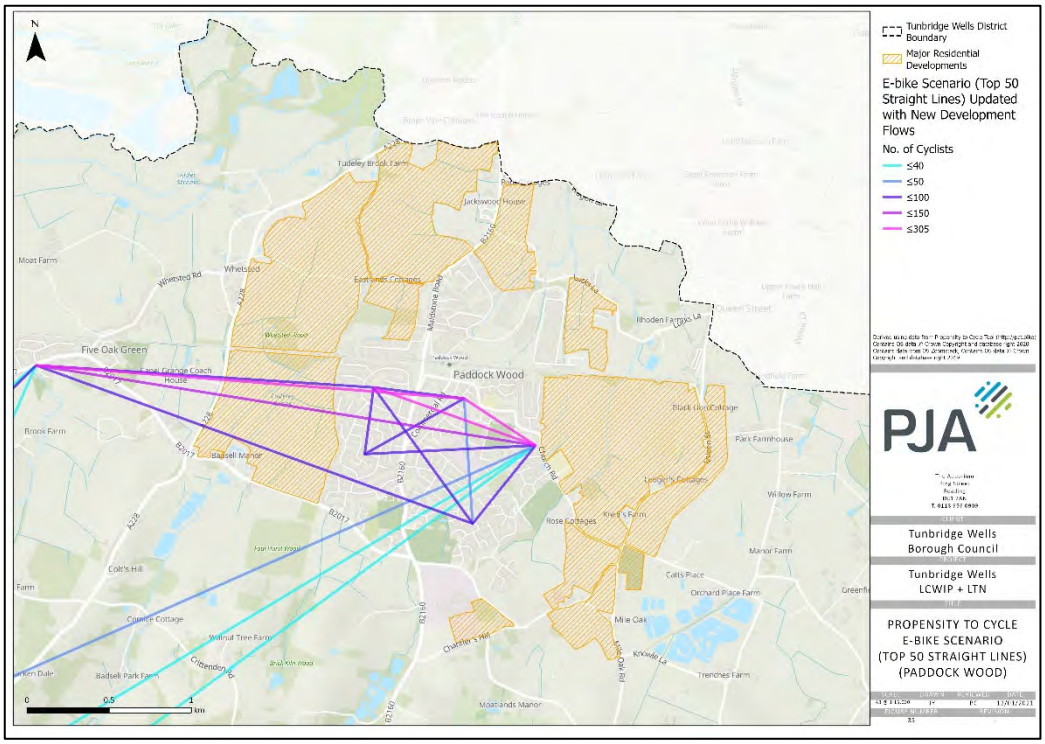


Figure 4-10: Paddock Wood – PCT E-Bike straight-line scenario with future trips

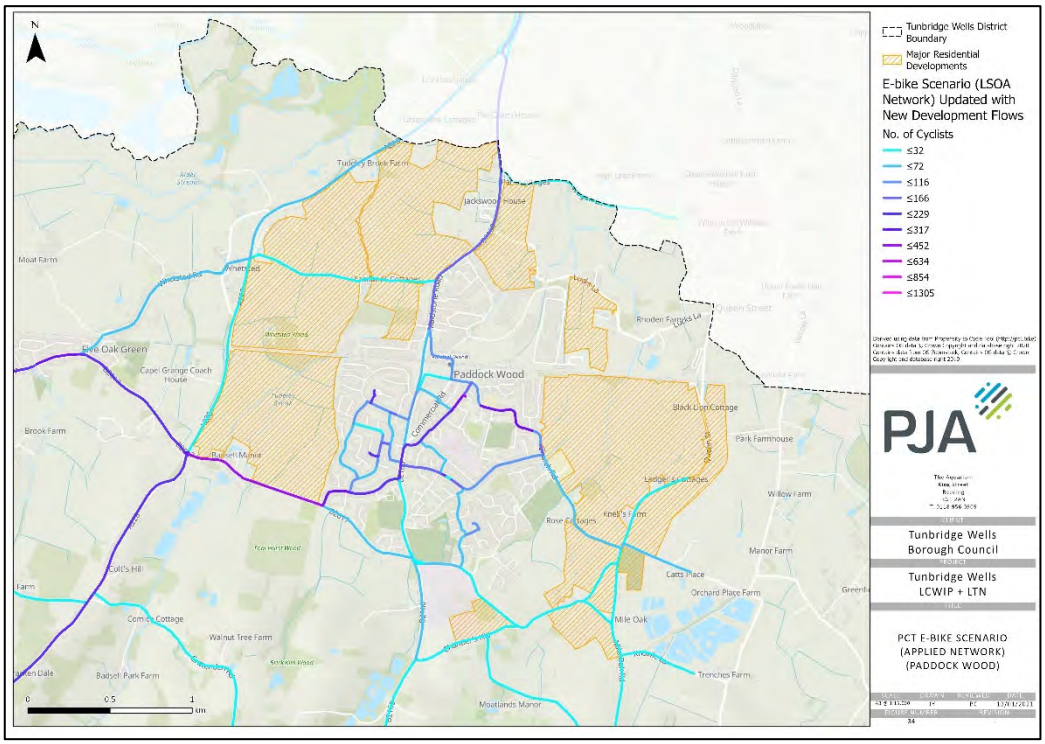


Figure 4-11: Paddock Wood – PCT E-Bike applied network scenario with future trips

Based on the PCT outputs, a cycling network for Paddock Wood was identified by applying the PCT desire lines onto the local highway network. The geographic scope for cycling element of the LCWIP was identified by using a 5km radius (20mins bike ride) from the existing town centre as shown in the plan below – all sites were then audited using the Route Selection Tool (RST).

4.8 RST audits and recommendations

The process identified a network of nine corridors (Figure **4-12**) to be audited on site with each corridor converging on the town centre. Each route was audited using the "Route Selection Tool" set out in the DfT LCWIP process guidance. Several of the corridors overlap with proposed Inter-Urban routes

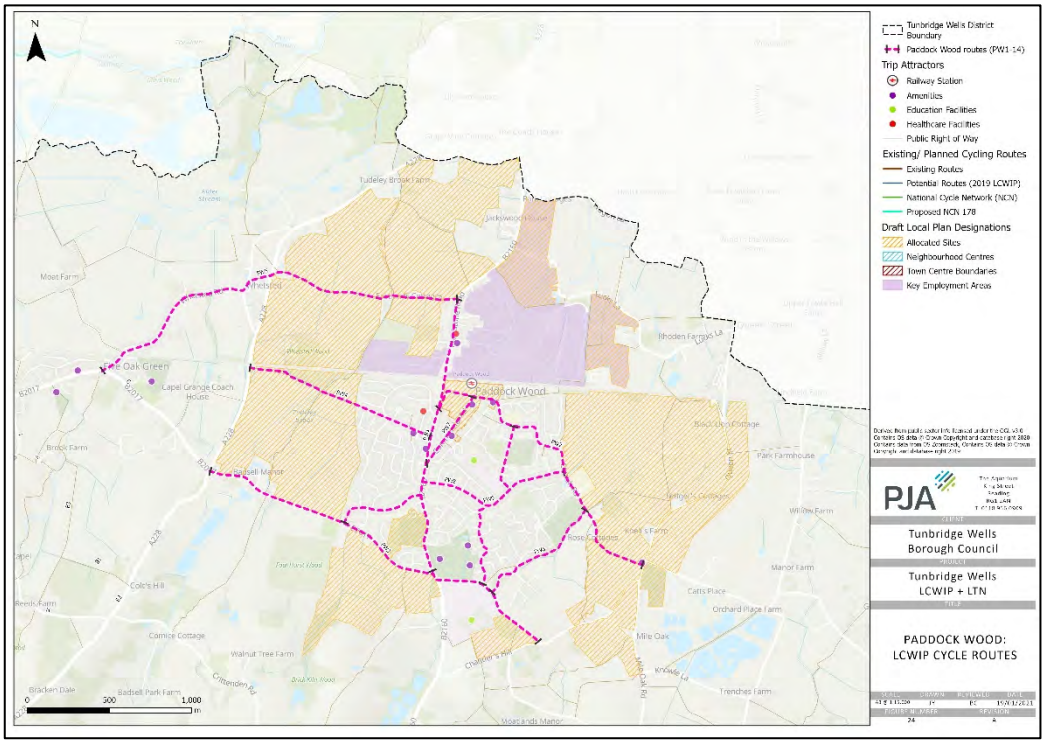


Figure 4-12: Paddock Wood –LCWIP Cycling Network

The Route Selection Tool (RST) is an appraisal methodology that allows practitioners to determine the best route to fulfil a particular straight line corridor, referencing against existing conditions and the shortest available route. It considers five important criteria that determine the quality of a cycling route (directness, safety, gradient, connectivity, and comfort) plus junction safety. The RST audit then informs recommendations for improvements along each corridor. The RST considers the six important criteria that determine the quality of a cycling route which are described below. The RST divides routes into shorter sections which should reflect changes in the character and layout of the alignment.

- Directness: Compares the length of cycle route against the equivalent vehicle route with cycle routes that are shorter than the vehicle is scored positively for Directness. Higher scores can be achieved through the introduction of modal filters or routing cyclists through parks/open spaces to provide a more direct connection
- Gradient: Identifies the steepest section of route within the proposed alignment with gradients that exceed either 5% in gradient and/or 50m in length scoring lower
- Safety: Considers vehicle flows and speeds to better understand the exposure of cyclists to vehicular traffic. Routes with either protected cycle facilities or low traffic environments score highest
- Connectivity: Records the number of individual cycle connections into a section of route – routes should aim to have >4 connections per km.
- Comfort: Assesses the space available for cycling and the quality of surfacing with a preference for protected cycle facilities of >3m (bi-directional) or >2m (uniflow).
- Critical Junctions: Provides a number of critical junction design issues including vehicle flows, protection from vehicular traffic, wide junction splays, and junction geometries.

Figure 4-13: Photos from RST Audits of Paddock Wood: Commercial Road/Maidstone Road (top left), Warrington Road (top right), Badsell Road (bottom left), and Warrington Road (bottom right)

The RST audit informs recommendations for design proposals along each corridor which are combined with the walking recommendations later in this chapter. Many of the cycling design recommendations overlap with the LCWIP walking recommendations, particularly in relation to the provision of crossing facilities and the design of the town's main roads. The LCWIP's cycle design recommendations for Paddock Wood generally follow the below overarching design principles:

- **Lack of dedicated cycling facilities** – the current cycle facilities within the town are very limited which results in cyclists being forced to use the carriageway and share with general traffic on most routes. A short section of shared use facilities are provided at the Maidstone Road/Mascalls Court Road junction, and these facilities then continue along Mascalls Court Road to the Green Lanes junction. The recommendation is to provide protected cycle facilities on routes where cyclists would be mixing with vehicle flows of >500 vehicles per hour. The below examples from Waltham Forest and Camden illustrate potential arrangements for protected cycle facilities.

Figure 4-14: Blackhorse Lane (left) has installed narrow cycle tracks alongside the existing footway with a small kerb upstand, and Blackfriars Bridge (right) has installed bi-directional cycle tracks

- **Junctions** – the Maidstone Road/ Mascalls Court Road junction is the only junction in the town with dedicated cycle crossing facilities. The remainder of junctions in the town are either uncontrolled or only provide pedestrian crossing facilities. This undermines the town's cycle permeability and makes it difficult to connect with surrounding routes. A key recommendation therefore is to improve key junctions/crossings in the town to improve connectivity and permeability for cycling. Many of the junctions identified for improvements also require improvements for pedestrians too.

Figure 4-15: Parallel Pedestrian + Cycle Crossing, Lea Bridge Road (left), and dedicated cycle signalised crossing (Cycleway 6, Kings Cross)

- **Mixing with general traffic** - This was a particular issue on busier routes, such as Maidstone Road and Badsell Road, where vehicle volumes and speeds create uncomfortable conditions for cycling. Many cyclists were observed using footways, including Warrington Road and Old Kent Road, when conducting the RST. The LCWIP recommendation is to provide protected cycle facilities on these routes where feasible.

  Limited Porosity – A majority of Paddock Wood's street layout is comprised of cul-de-sacs which means through-traffic is focussed on a handful of key routes in the town which were also the recommended LCWIP cycle routes. The wider challenge for the town, as discussed previously in 4.6, in balancing vehicle and cycle porosity in the town. Developing Low Traffic Neighbourhood in the town would help to address the issues of cyclists mixing with general traffic and helping to improve the overall permeability of the town's cycle network.

Figure 4-16: Combined informal crossing and modal filter (Downs Road, Hackney), and Modal Filter installed with cycle access (Grove Road, LB Waltham Forest)

4.9 Network plan for walking

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

Figure **4-18** overleaf illustrates walking isochrones from the centre of Paddock Wood which was the first step in understanding the walking catchment area for the LCWIP.

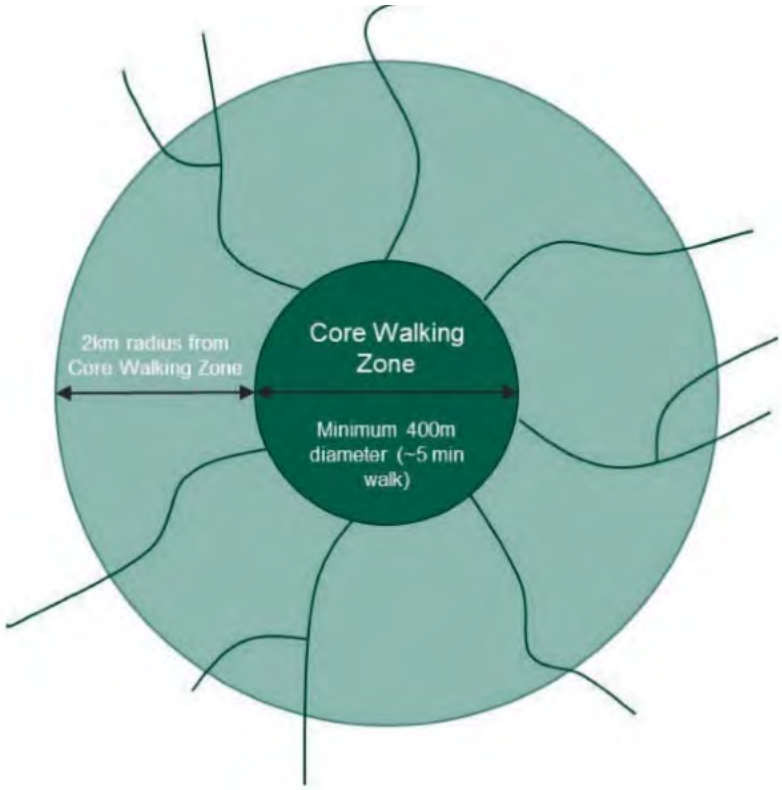


Figure 4-17: Illustration of Core Walking Zones and key walking routes

Walking isochrones were generated in ArcGIS to illustrate the extents of 10 and 20 minute walks from the centre of the town using the existing road network. Figure **4-18** illustrates how Paddock Wood is already a very walkable town with a majority of key destinations within a 30 minute walk across the town. The focus of the LCWIP Walking Network therefore was on developing a series of walking routes that strategically connect the town centre with its surroundings.

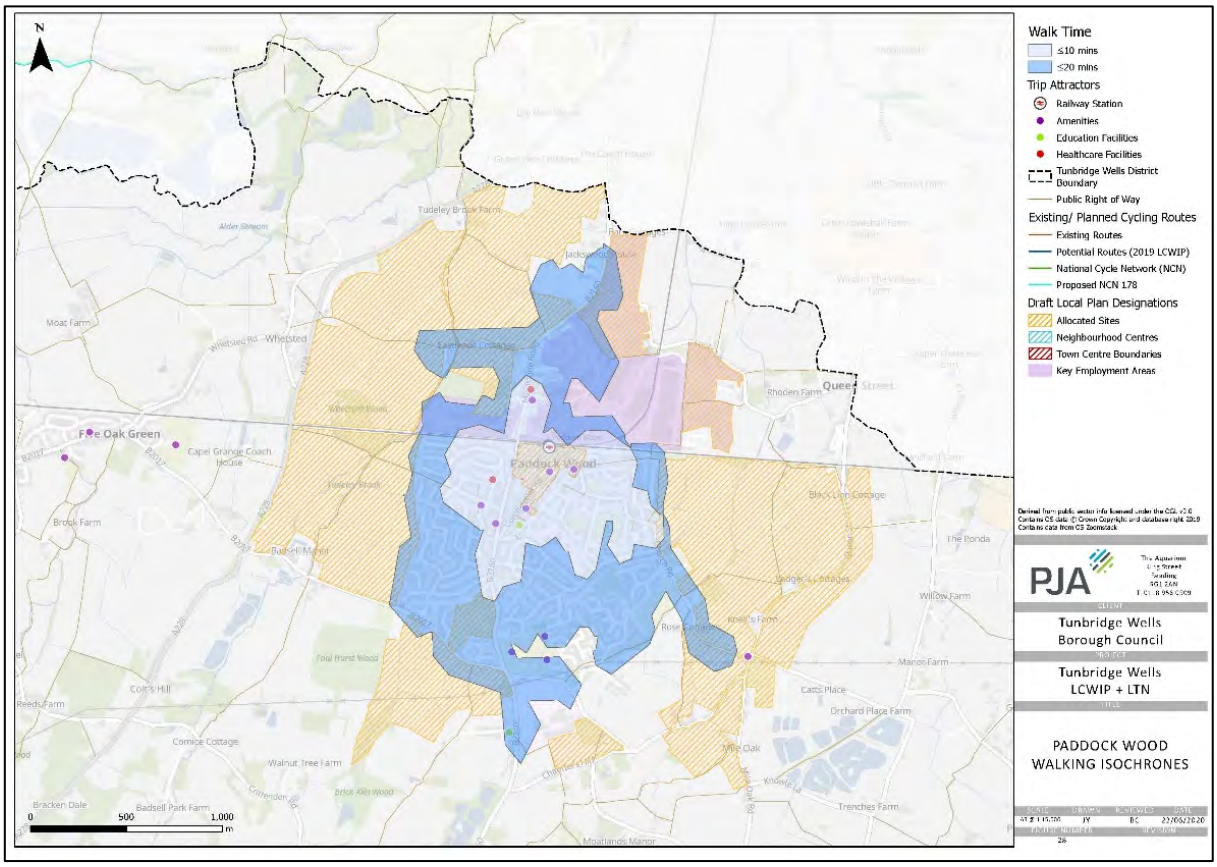


Figure 4-18: 10 and 20 minute walking isochrones from Paddock Wood town centre

The plan also illustrates how the 20 minute walking isochrones extend to meet with the proposed development plots which surround the town. In doing so, the plan illustrates how important it will be to integrate the developments sites into the existing fabric of Paddock Wood to maximise its walkability.

Based on the analysis of the existing town and the walking isochrones, walking routes were identified and then audited on site using the Walking Route Audit Tool (WRAT) methodology set out in the DfT LCWIP process guidance (Figure **4-19**). The routes are generally focused on the key desire lines to the town centre from the surrounding residential areas and are predominantly focussed on roads, although some routes used PROW. The extent of routes to the north were limited by the lack of crossing points across the railway line which is an overarching issue for the town and further enhancing connectivity with the north of Paddock Wood.

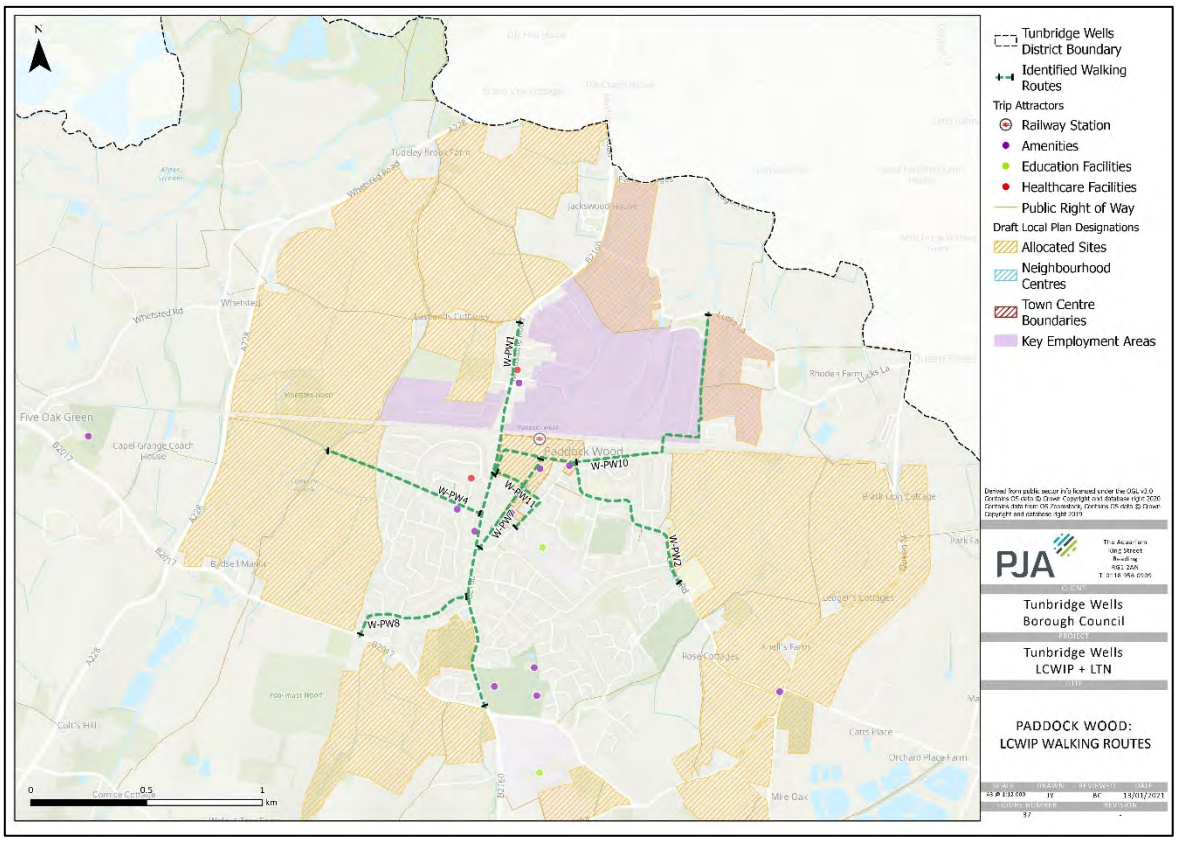


Figure 4-19: LCWIP Walking Routes

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

- Attractiveness: Considers the impact of maintenance, traffic noise, pollution, and fear of crime upon the attractiveness of a route
- Comfort: Reviews the amount of space available for walking and the impact of obstructions upon walking such as footway parking, street clutter and staggered crossings
- Directness: Assesses how closely pedestrian facilities are aligned with the natural desire line and accommodating the crossing facilities are for pedestrians to follow their preferred route

- Safety: Focusses on the impact of vehicle volumes and speeds and interaction with pedestrians
- Coherence: Focuses on the provision of dropped kerb and tactile information for pedestrians

The findings from the walking audits were translated into design measures for each route and are summarised later in this chapter. The design recommendations have been summarised by the below design themes. This approach provides the option of delivering the design measures either by route or by addressing a town-wide theme. For example, the LCWIP identifies many sites across the town which lack tactile information and/or dropped kerb provision - it might be more logical for TWBC/KCC to undertake a town-wide approach to this issue rather than zonal. Some elements may also be delivered separately with the wider area in which they sit if this provides efficiencies, i.e. where they align to proposed development sites.

- **Junction Treatment**: Many of the suburban junctions in the town had wide corner radii and junction splays which significantly lengthen crossing distances and created a disjointed experience for pedestrians. The recommendation for these locations is to consider tightening the junction geometry and installing either continuous footway/raise table treatments to improve continuity and priority of pedestrian facilities. There are also locations in the town where street clutter, such as pedestrian guardrailing, also serves to elongate crossing points and reduce walkability

Figure 4-20: Example of wide-splayed junction at Warrington Road (left) and precedent image of a continuous footway treatment on right (Willow Street, Hackney)

- **Dedicated crossing points**: Pedestrian crossing points are limited in Paddock Wood particularly across the main roads, such as Maidstone Road and Church Road. The cumulative effect is to limit the permeability and continuity of the town's walking network. Pedestrians are reliant on a limited number of crossings which are not necessarily aligned with the natural desire lines. The recommendations identify a series of locations in the town where new or relocated facilities would help to enhance the network's connectivity.

- **Missing Dropped Kerb/Tactile Information**: Locates crossings which are either missing or have substandard provision of dropped kerb and/or tactile information. This issue should be considered alongside the junction treatment locations as many sites had both issues.

Figure 4-21: Green Lane are Warrington Road are two of many side-entry junctions in the town which are missing tactile information and dropped kerbs

- **Missing Footways**: Several sites were located in the town where footways were not present either on one or both sides. This is a key barrier to walking and in creating a connected walking network. The recommendations identify where a new footway should be considered for installation

Figure 4-22: Maidstone Road is the key severance feature through the town which reduces the overall walking and cycling permeability of Paddock Wood

- **Paths + Alleyways**: Many of the town's cul-de-sacs are linked by narrow paths and alleyways which provide important connections in the walking network and often much more direct routes than the on-road equivalent. However, clutter and maintenance were key issues which undermined the attractiveness of these routes. Guardrailing and lack of lighting were identified as particular issues to address in the WRAT audits.

Figure 4-23: Examples of cluttered alleyways in Paddock Wood: Ringham Avenue (Left) and Mount Pleasant (Right)

The audit findings are presented in an Appendix to the final report.

4.10 LCWIP Design recommendations

Based on the findings from the RST and WRAT audits, design recommendations were made for each cycling and walking route and are summarised in Figure 4-24. The below plan uses icons to represent the different design measures across Paddock Wood and these are summarised in more detail in the appendix with costings for the individual measures.

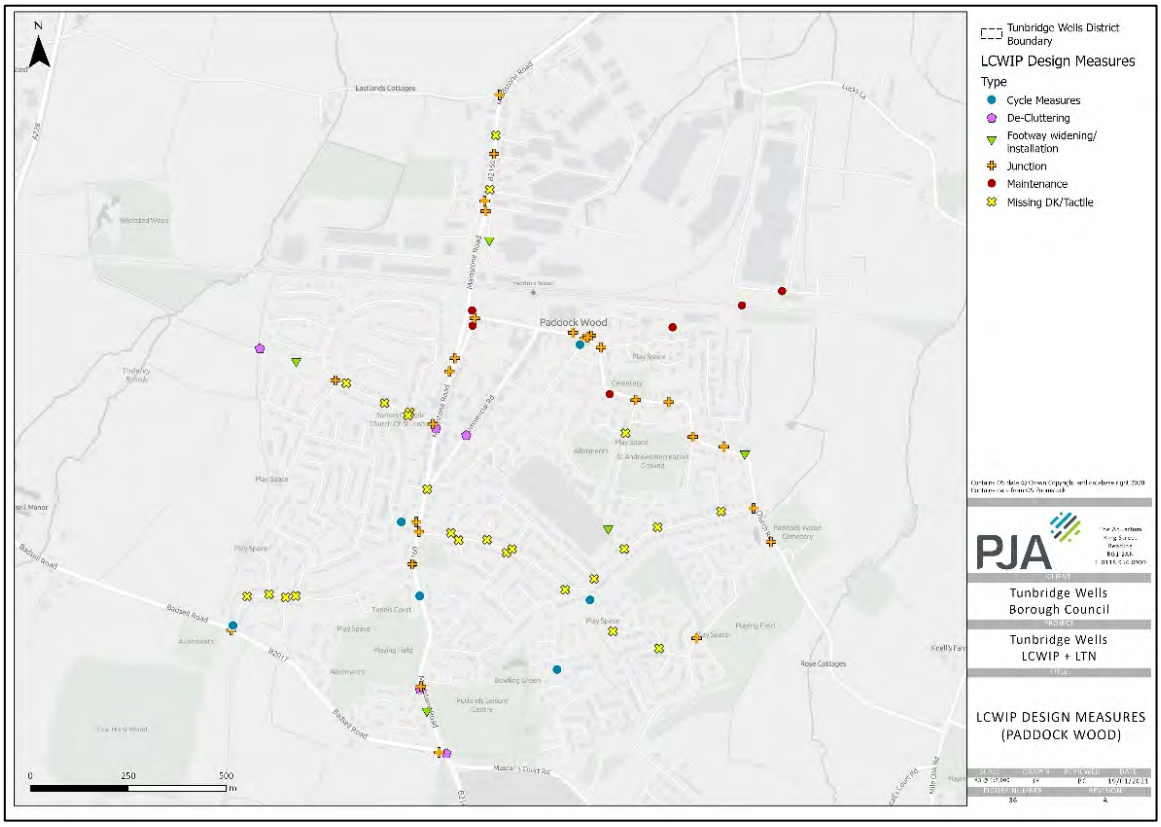


Figure 4-24: Combined LCWIP Design Measures

4.11 Prioritisation

The purpose of the Prioritisation stage is to establish a prioritised programme for the delivery of the walking and cycling measures identified in Stages 3 and 4. The LCWIP methodology includes a suggested approach for prioritising measures however it also emphasises that the methodology should be tailored to the local context. On this basis, a bespoke prioritisation approach was developed for Paddock Wood which identified the below 'Priority Clusters' (Figure 4-25).

- Station Road/Commercial Road/Church Road Junction
- Maidstone Road/ Commercial Road Junction
- Maidstone Road/Badsell Road
- Maidstone Road/ Mount Pleasant Road

This approach was felt to be more practicable for delivery as it would ensure that the recommended design measures were co-ordinated in their delivery as part of more joined-up design packages. The LCWIP design proposals have been shared and co-ordinated with the Strategic Sites Infrastructure Framework.

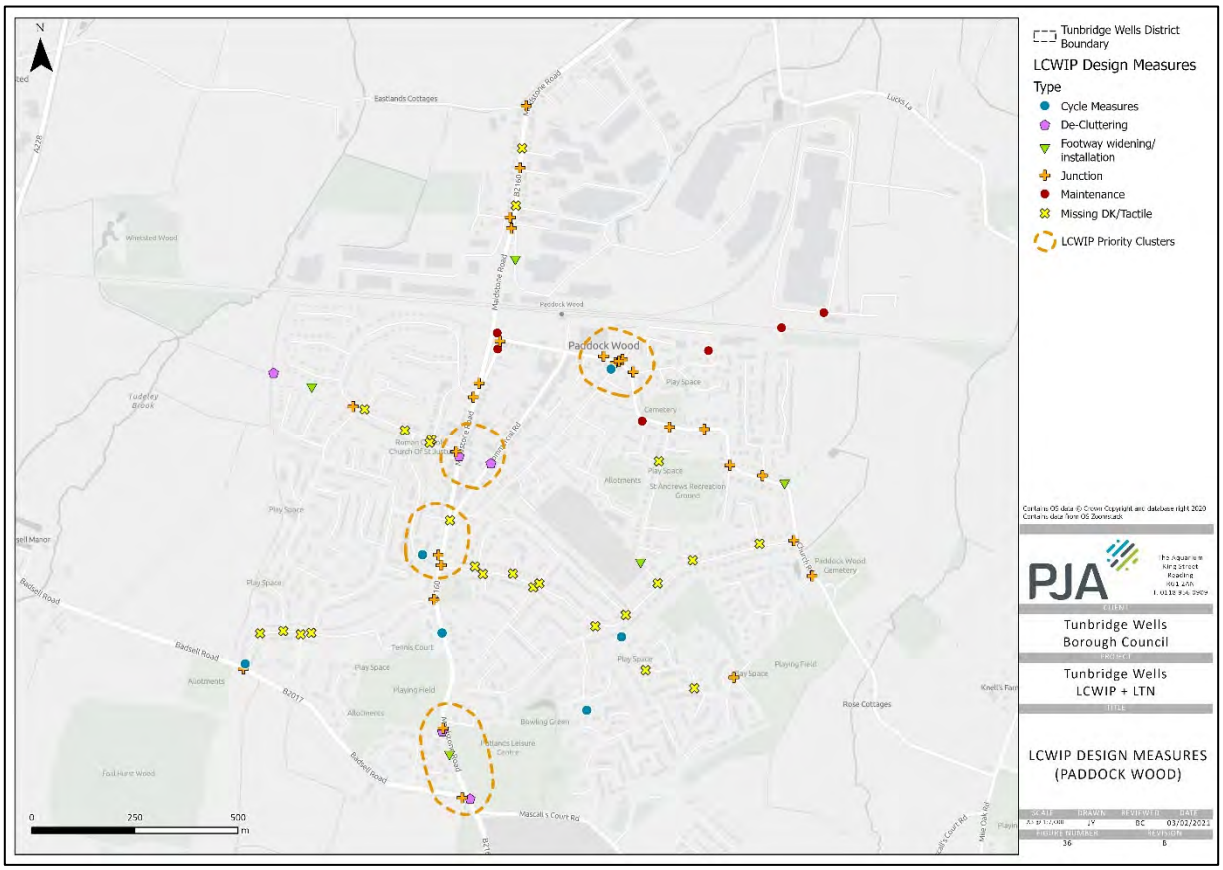


Figure 4-25: Combined LCWIP Design Measures

Figure 4-25 illustrates the location of the clusters and the measures in these clusters are described in more detail below:

- **Station Road/Commercial Road/Church Road Junction**: As well as being the town's key gateway, it is also an important junction for movement through the town particularly along Station Road and Commercial Road. There are historic public realm features at the junction however these now feel dated and do not serve the purpose of prioritising place over movement. The recommendation is that the movement function of the area is reduced to enable wider public realm improvements which enhance the connection between the station and the town and make conditions more comfortable for walking and cycling. Section 4.10 includes further recommendations to improve the area by reducing levels of vehicular traffic on Commercial Road and reviewing vehicle access routes within the town.

Figure 4-26: Photos from the Station Road/Commercial Road/Church Road Junction

- **Maidstone Road/ Commercial Road Junction** - this is a key junction in the town particularly for east-west movements across the Maidstone Road towards the train station and Commercial Road. The current junction layout is complicated and dominated by vehicular traffic with no dedicated pedestrian crossing facilities on desire lines. The junction has the potential to become a key landmark in the town and conduit for active travel routes. The recommendation is to rationalise the existing junction to reduce the number of vehicle lanes and turning pockets, introduce dedicated crossing facilities, and widen all footways through the junction. These proposals could be further enhanced as part of a wider review of OGV/HGV vehicle routings in the town as large vehicles are currently directed down Commercial Road.

Figure 4-27: Photos of Maidstone Road/Commercial Road Junction

- **Maidstone Road/Badsell Road/ Mascalls Court Road -** This is an important junction that connects Paddock Wood onwards with the Mascalls Academy, Putlands Sports + Leisure Centre, and future developments including Mascalls Grange. Shared pedestrian and cycling facilities are in place at the junction and controlled crossing facilities however they are not intuitive and assume pedestrians and cyclists sharing. The recommendation is to provide crossing facilities on all arms of the junctions and provide dedicated cycling facilities which are separate from footways. The existing zebra crossing of Mascalls Court Road should also be upgraded to provide a parallel cycle crossing.

Figure 4-28: Maidstone Road/ Badsell Road/ Mascalls Court Road Junction

- **Maidstone Road/ Mount Pleasant Road** - The recommendation at this junction is to improve connectivity over the Maidstone Road which will support the future development of The Walking and cycling roots identified in the LCWIP. There is an existing crossing close to the junction however it is not on the natural desire line between Mount Pleasant Road and the pedestrian alleyway that leads onto Commercial Road. The improvements should focus on de-cluttering the junction, upgrading the existing crossing to enable cycle access and explore feasibility of relocation closer to the desire line.

4.12 Additional Measures for Paddock Wood

In addition to identifying discreet design measures to improve both walking and cycling conditions, complementary measures have been identified which could produce more transformational changes in Paddock Wood. These measures would improve conditions for walking and cycling throughout Paddock Wood by reducing the impact of vehicular traffic on the town. Given the ambitious scale of these measures, it is likely that they will need to be considered as medium/long-term approaches. These additional measures have been discussed with the project team for the Paddock Wood and Tudeley 'Masterplanning and Infrastructure Study' which includes similar future measures for Paddock Wood.

- **Low Traffic Town**: The Maidstone Road railway bridge provides the only vehicle access over the railway line in Paddock Wood. Consequently, it is the focus of a high proportion of vehicle trips in the town. The concept of a 'Low Traffic Town' would expand upon the Low Traffic Neighbourhood principle recommended in this report by removing vehicle access over the railway bridge except for bus services. This is likely to reduce the number of vehicle trips in the town which in turn would improve conditions for walking and cycling and create further opportunities for improving the town's streetscapes.
- **Commercial Road**: this is the main high street in Paddock Wood and should be the key public space in the town. Instead, its layout is primarily focussed on accommodating through-traffic, providing access to car parks, and enabling access for larger vehicles (>7.5t). Consequently, the resulting streetscape does not fulfil its potential as the key street in the town. To achieve more significant change, the current vehicle access and parking facilities would need to be reviewed and considered for removal to create a healthier, greener, and more attractive High Street. This approach would build upon KCC's previous EATF design arrangement which also removed through access for vehicles.
- **20mph town-wide limit**: 20mph speed limits are an increasingly popular tool used by Kent County Council (KCC) used to promote lower vehicle speeds. Schemes have recently been installed in Tonbridge, Tunbridge Wells and Faversham. Applying a town-wide limit would provide a more cohesive and intuitive approach which would also reduce the need for excessive signage. KCC's current approach uses road markings and signage to raise awareness of the new speed limit, supplemented with planters used at strategic 'gateway' locations in the town.
- **Footway Parking**: Footway parking was a particularly prevalent issue in more residential areas within the Core Walking Zones. Footway parking channels pedestrians into narrowed sections of footway which incurs delay and reduces pedestrian comfort levels. Footway parking also frequently caused damage to pavements which were not designed to accommodate the weight of parked/turning vehicles. While the government is currently considering a ban or at least strengthening of local authorities' positions on footway parking

enforcement, a formalised order to ban footway parking can still be introduced under current regulations. Restrictions on footway parking have recently been launched in Stevenage and Brighton and Hove. The restrictions are reinforced with signage to make drivers aware that they are entering a prohibited zone.

- **Wayfinding:** The auditing process revealed that Paddock Wood has a very permeable and well connected pedestrian network within each of its neighbourhoods. Footways are provided alongside a majority of vehicle routes and there is also an extensive 'off-highway' pedestrian network which is routed through housing estates and open spaces. However, the legibility of the 'off-highway' network is limited with many of the routes not signposted and no information provided to explain how the routes connect with the wider area. Consequently, these routes rely on local knowledge to understand the routing and purpose. The lack of wayfinding undermined the walkability of the walking zones, this was further exacerbated in some instances where lack of social safety and passive surveillance creates unwelcoming environments. Developing a network of legibility for Paddock Wood would help reinforce the compact nature of the local centres and enhance inter-connectivity between the different neighbourhoods. Recognising that wayfinding has the potential of adding to street clutter, there is an opportunity for a wayfinding programme to be delivered as part of a wider de-cluttering exercise, where wayfinding can be bundled into other street furniture items, e.g. street name plates.

Figure 4-29: Example of vehicles double parking on Commercial Road footways

5 Inter-Urban Routes

5.1 Introduction

To fulfil the Borough's active travel potential and help achieve the proposed mode share shift in Tunbridge Wells, it is necessary to improve and increase the availability of routes between the Borough's main settlements. For the purposes of this study, these routes have been described as 'Inter Urban Routes' with Tunbridge Wells, Southborough, Paddock Wood and Cranbrook identified by TWBC as the main 'urban' centres within the Borough.

This chapter describes the approach taken to review and identify preferred alignments to be developed as future Inter-Urban Routes based on the following stages.

1 Desktop Review and Network Development
2 Site Audits
3 Network Development
4 Route Recommendations

5.2 Defining Inter-Urban Routes

For the purposes of this study, Inter-Urban Routes have been defined as 'cycling routes connecting the borough's main settlements using consistent, safe and intuitive designs to ensure that cyclists can follow the routes comfortably throughout'.

There is not a single design definition for the routes as the design context varied considerably across the different routes and therefore the recommendations for each route are case-specific. However, the conclusion of the report does include general recommendations for promoting these routes and introducing measures, such as wayfinding, to provide a consistent identity for the inter-urban network.

5.3 Scope of Inter-Urban Routes

Prior to developing the Inter-Urban network and route alignments, a high level review was undertaken of the wider context for cycling in the area bound by Tunbridge Wells/Tonbridge/Paddock Wood. Figure **5-2** overleaf was generated to help understand cycle distances and to provide context of how long it could take to follow the inter-urban routes. The isochrone plan was generated using the existing highways network to estimate 20 minute and 30 minute cycling journeys from the centre of each of the key surrounding settlements. This analysis is intended to provide an overview of cycling distances and is not exhaustive as it excludes non-highway routes and therefore does not represent all the route options that were subsequently reviewed in this project. The plan is useful for contextualising the geographic reach of the key settlements in the Borough and their accessibility from the wider area which will be the focus of the Inter-Urban network.

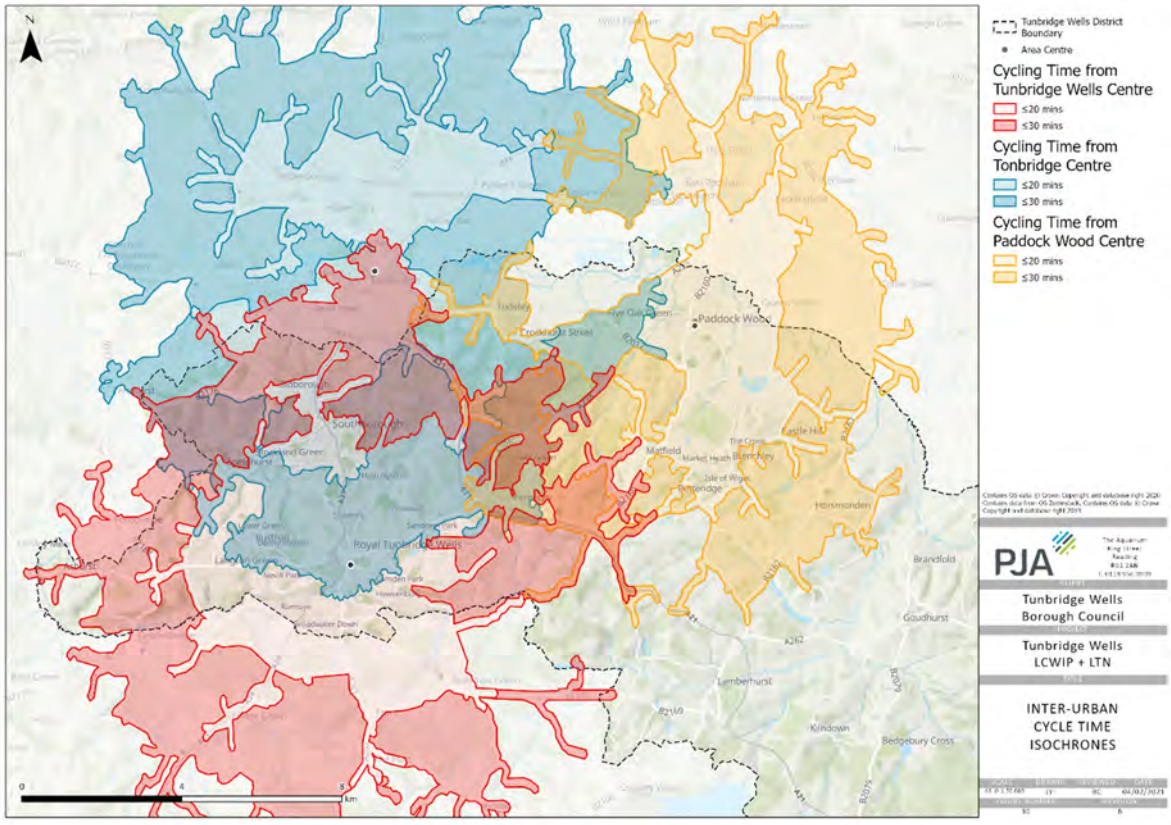


Figure 5-2: Cycling Isochrone Plan

The combined isochrones help to illustrate the potential cycling catchment area of each settlement and identifies key locations where isochrones overlap and therefore sites might offer a more strategic advantage due to their proximity to more than one settlement. For example, the plan suggests that Tudeley and Capel would both be within a 30 minute cycle of both Paddock Wood

and Tonbridge. The plan also usefully illustrates the cycle catchment areas of the main settlements in the Borough and how far these extend beyond the towns themselves.

In addition to reviewing cycle distances, it was important to contextualise the local topography as this had been raised as a potential barrier to the future uptake of cycling between the main settlements. The plan below summarises the terrain of the Inter-Urban Study Area in 10m increments – the areas in green are lower-lying and <50m above sea level whilst the areas in darker brown are generally higher and <150m above sea level. The north of the Borough is generally lower-lying and follows the River Medway Basin, whilst the highest parts of the Borough are located around Tunbridge Wels, Pembury and Bidborough. Gradient was a key consideration in the identification of IUR alignments and the extent to which any proposed alignments interacted with steeper sections.

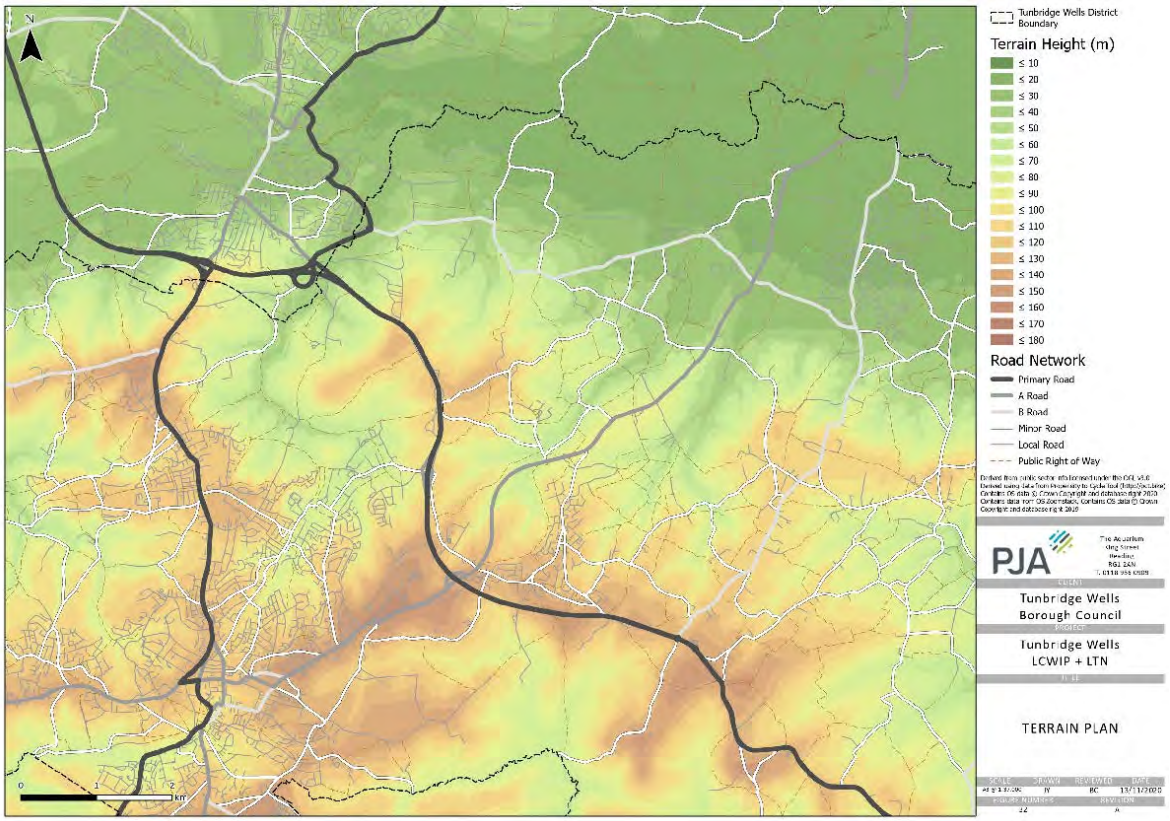


Figure 5-3: Terrain plan of the Inter-Urban Study Area

5.4 Desktop Review and Network Development

The first stage in developing the Inter-Urban Routes focussed on the development of an initial network comprising of a long-list of potential routes. These routes were identified through a desktop review that used a combination of the Propensity to Cycle Tool (PCT) outputs, TWBC's previously identified routes, and existing walking and cycling routes in the Borough.

- The **PCT** was used to identify the key cycling straight-desire lines in the Borough between the main urban settlements and to understand how these desire lines could be applied to the existing road network. The PCT 'E-Bike' Scenario was used as this scenario is the most ambitious in terms of cycle ambition (c.22% of all commuting trips by bicycle) and includes improved access to e-bikes which is an important consideration in the development of an inter-urban network and overcoming distance and gradient as barriers to propensity to cycle. Future development trip demand was factored into the PCT calculations to ensure that the plans reflect the anticipated increase in demand generated by these developments.
- Figure **5-4** and Figure **5-5** present the Straight Line outputs and then an Applied network plan. The straight-line plans are generated by pairing origin-destination LSOA (Lower Super Output Area) census points between home and work addresses. The plan highlights two long-distance desire lines between Tunbridge Wells and Paddock Wood, and Tunbridge Wells with Tudeley. The plan also highlights a cluster of demand between Tudeley and Paddock Wood which reflects the high level of development that is forecast for the area.

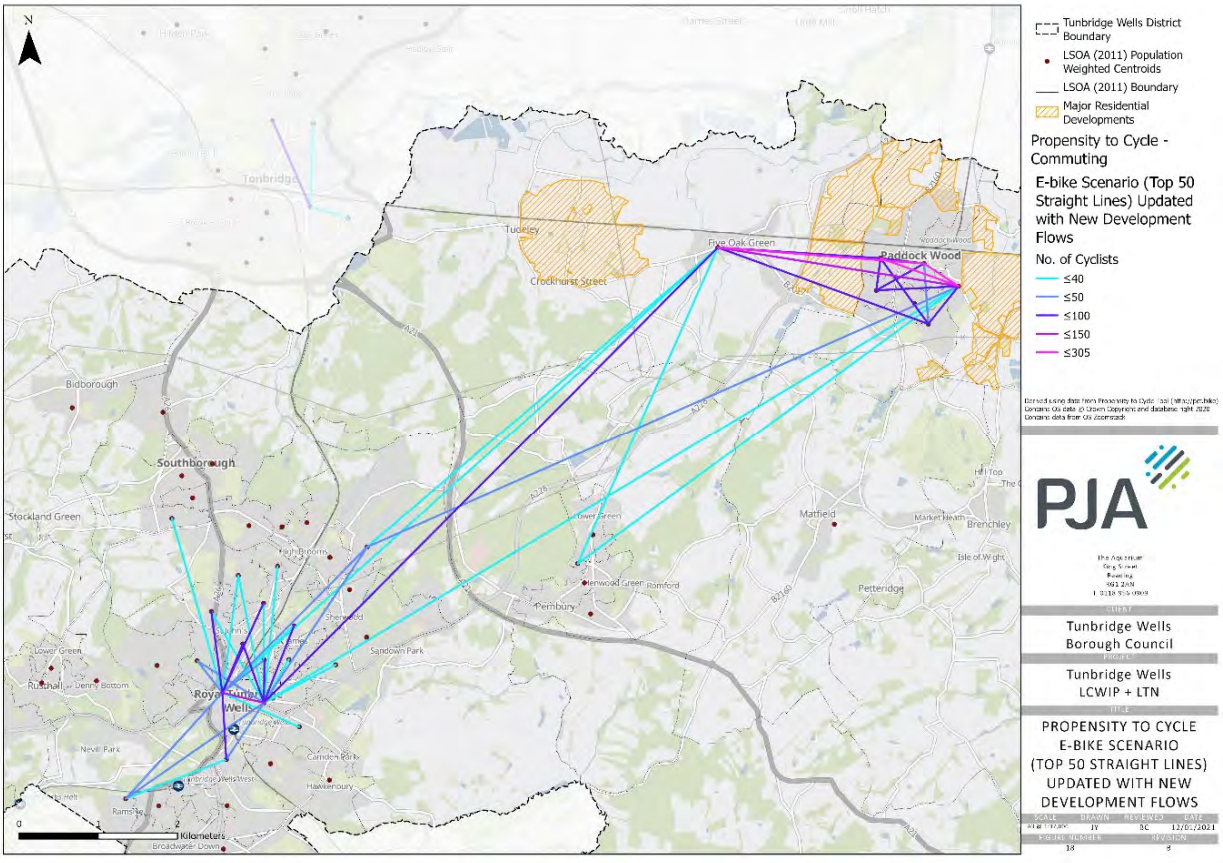


Figure 5-4: PCT Straight Line plan of 'Top 50 Cycle Routes' using E-Bike scenario

The **'Applied Network'** plan uses the straight-line plan and applies this to the existing road network to provide an indication of where increased levels of cycling might occur in the Borough. The applied network is focussed on the existing main roads that connect the urban centres which is unsurprising as these offer the most direct connections between the centres, and there are relatively limited alternative alignments in-between the main road network. Routes identified in pink/purple have the highest levels of future cycling. The applied network plan does not consider the quality of existing conditions on these routes and was used therefore specifically to identify alignments for further review.

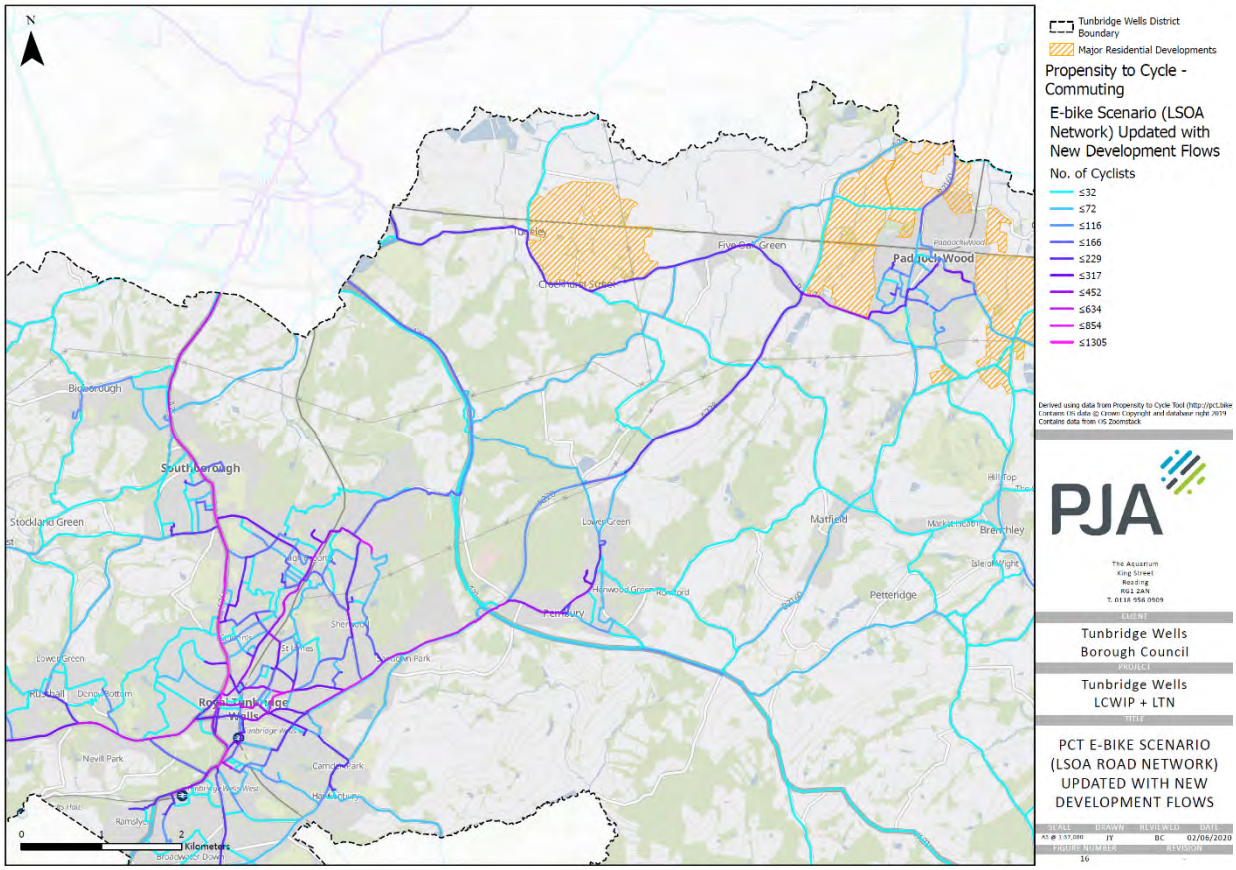


Figure 5-5: PCT 'Applied Network' plan

– **Non-Public Highway Routes**: In addition to the PCT network, 'non-public highway routes' were mapped including Public Rights of Way (PROW), Bridleways, existing cycle routes and Private Roads. These routes were identified to provide alternatives to the main road network which the PCT outputs had focussed on. Figure **5-6** combines the 'Non-public highway routes' and PCT outputs to better understand the distribution of a potential inter-urban network. The plan illustrates that there are many alternative alignments that could be considered for development away from the main road network. This plan formed the basis of the Site Audit stage. Prior to completing the Site Audits, a desktop design review was completed on the routes shown in the plan to provide a high-level overview of existing conditions for cycling on the identified corridors.

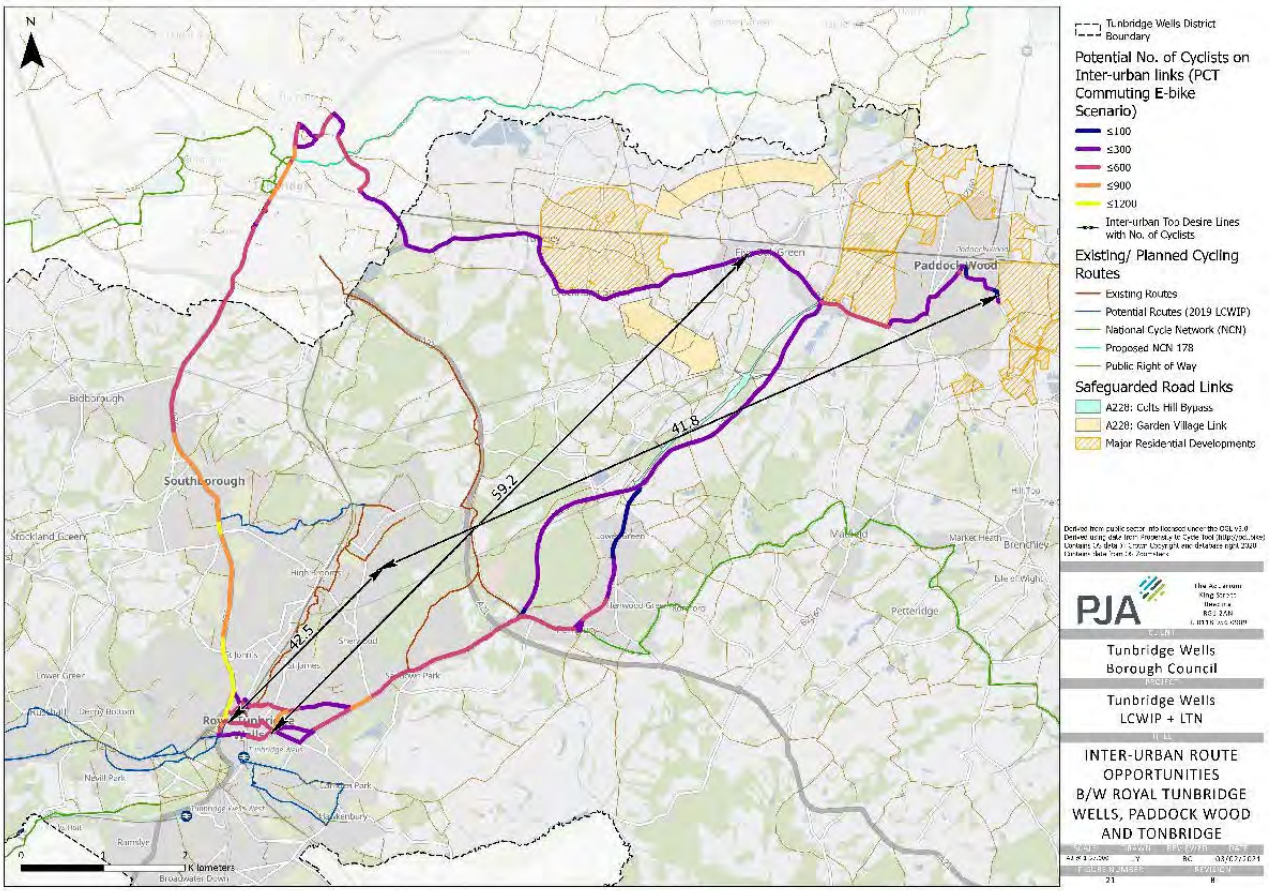


Figure 5-6: Combined PCT Outputs and 'Non-public Highway Routes'

5.5 Site Audits

The purpose of the Site Audits was to review the alignments identified in the Desktop Review to better understand the on-site conditions and feasibility of progressing future routes. The project team visited all of the identified routes on bike including the Public Rights of Way (PROW) and each alignment was assigned a 'route type' based on the site observations to help categorise the network. Given the wide range of routes visited, it was considered essential to develop these typologies to better understand the range of route types available and because many of the key observations were related to the typologies.

Figure **5-7** summarises the alignments based on the typologies which were developed during the Site Audits. The plan helps to illustrate the distribution of different types of route and how these relate to the main centres within the Borough. The route typologies will be an important consideration in the development of the IUR network and specific design proposals based on typology are provided later in this chapter.

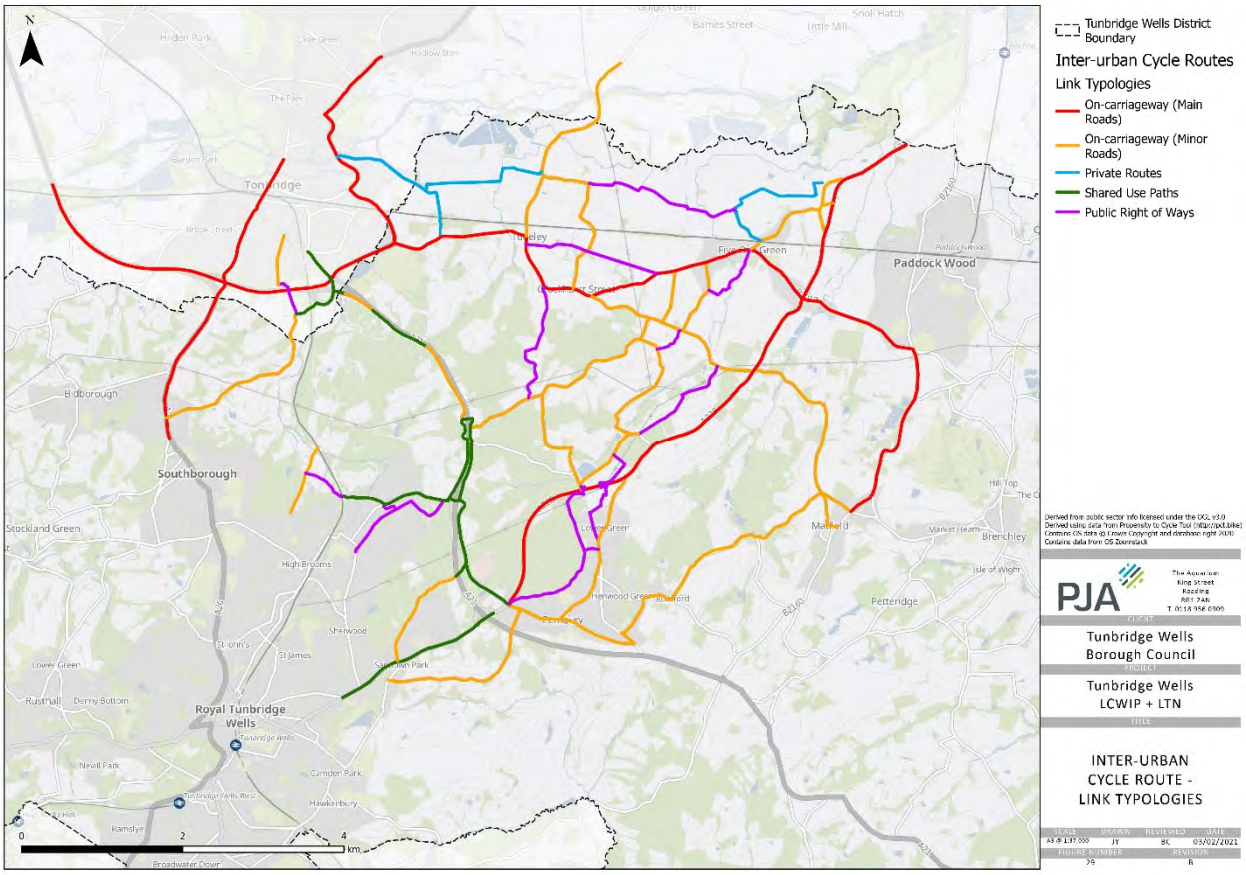


Figure 5-7: Plan of Inter-Urban Route Typologies

The following tables provide an overview of each route typology and the key observations from the site audits, including the strengths and weaknesses of the different typologies.

Category	Description	Example
On-Carriageway (Main Roads)	These routes were focussed on the existing main road network comprising of both A and B roads. Invariably, they provided the most direct routes between the main settlements however this was compromised by the poor cycling level of service. Cycling was generally uncomfortable on these routes due the lack of dedicated cycling infrastructure combined with narrow road widths and high vehicle speeds.	Maidstone Road (A228), Badsell Road (B2017)

Strengths
Direct
Intuitive routes between main settlements
Well connected with local destinations
Passive Surveillance in parts

Weaknesses
Minimal cycle infrastructure on road and at junctions
Vehicle speeds and flows create Intimidating environment
Speed limits often >50mph
Limited lighting

Photos: Badsell Road, B2017 (Top), Maidstone Road, B2160 (Bottom Left), Woodgate Way, A26 (Bottom Right)

On-Carriageway (Minor Roads)	These routes followed quieter alignments with significantly less vehicular traffic. They were generally located in-between the main road network connecting smaller villages and destinations. Whilst the scope for dedicated cycle infrastructure is limited, the routes have the potential for conversion to 'Quiet Lanes' which could offer a quieter alternative cycling network through the Borough.	Amhurst Bank Road, Church Lane, Half Moon Lane.

Strengths	**Weaknesses**
Lower volumes of vehicular traffic More scenic and attractive routes than main road network Local destinations en route Fewer major junctions Provides more direct alignment between Tunbridge Wells and Paddock Wood/ Tudeley	Limited passive surveillance Less direct route alignments Limited scope for dedicated cycle infrastructure Poor maintenance

Photos: Half Moon Lane (Top), Church Lane (Bottom Left), Public Footpath WT244 nr. Capel (Bottom Right)

Private/ Access Only Routes	The site audits included private routes which currently prohibit general traffic and therefore offer quite comfortable low-traffic streets for cycling. The cycling environment on these routes was very similar to the 'On-Carriageway' Minor Roads except that there were fewer vehicles using these routes	Postern Lane, A21 Parallel routes

Strengths	**Weaknesses**
Access-only vehicular traffic More scenic and attractive routes than main road network Fewer major junctions Potentially more direct route alignment between Tonbridge and Paddock Wood	Development dependent upon securing access agreements Limited passive surveillance Less direct route alignments Limited scope for dedicated cycle infrastructure Fewer key destinations en route

Photos: Postern Lane (Top and Bottom Right), Access Route parallel to A21 (Bottom Left)

Shared Use Paths	Existing shared use paths were assessed where they could be incorporated into the wider inter-urban network. The recent LTN 1/20 on Cycling Infrastructure has further recommended against shared use designs in urban environments and recommends that they are only used in environments with 'very low' levels of footfall.	Pembury Road (NCN18/ A264) Mascalls Court Road and Tonbridge Road,

Strengths	**Weaknesses**
Cyclists protected from vehicular traffic Direct routes following main road network Generally well lit Connected with key local destinations	Compromises pedestrian level of service No priority at side-entry junctions over vehicles Poor maintenance Bi-directional cycle facilities often <2m wide

Photos: Pembury Road, A264 (Top), Tonbridge Road (Bottom Left), Access Route parallel to A21 (Bottom Right)

Public Rights of Way (PRoW)	There is an extensive network of PRoW routes in the Borough which could help infill gaps in the inter-urban network particularly between Pembury – Paddock Wood – Tudeley. Many of these routes are currently unsurfaced and therefore would require upgrading and revised access permission to allow cycling as well as equestrian access.	Pembury (WT231), Tudeley (WT169), and Paddock Wood (W176)

Strengths Minimal exposure to vehicular traffic More scenic and attractive routes than main road network PROW upgrades would also benefit pedestrian and equestrian access to routes	**Weaknesses** Limited scope for dedicated cycle infrastructure Route development subject to 'Creation Agreements' with landowners Limited passive surveillance Less direct route alignments

Photos: Sherenden Road, WT169 (Top), Footpath WT169 nr. Capel (Bottom Left), WT231 nr. Pembury (Bottom Right)

5.6 IUR Route Alignments

Having applied typologies to all sections of the IUR network, seven route alignments were developed to help concentrate the network and amalgamate the individual sections (Figure **5-8**). This approach in the long-term should form the basis of the IUR network with clearly defined routes anchored by key origins and destinations within the Borough. The plan also shows the proposed Colts Hill and Five Oak Green bypasses which have been proposed in the 'Masterplanning and Infrastructure Study'. The proposed bypasses will provide parallel shared use facilities and therefore provide an important addition to the network coverage of inter-urban routes in the Borough.

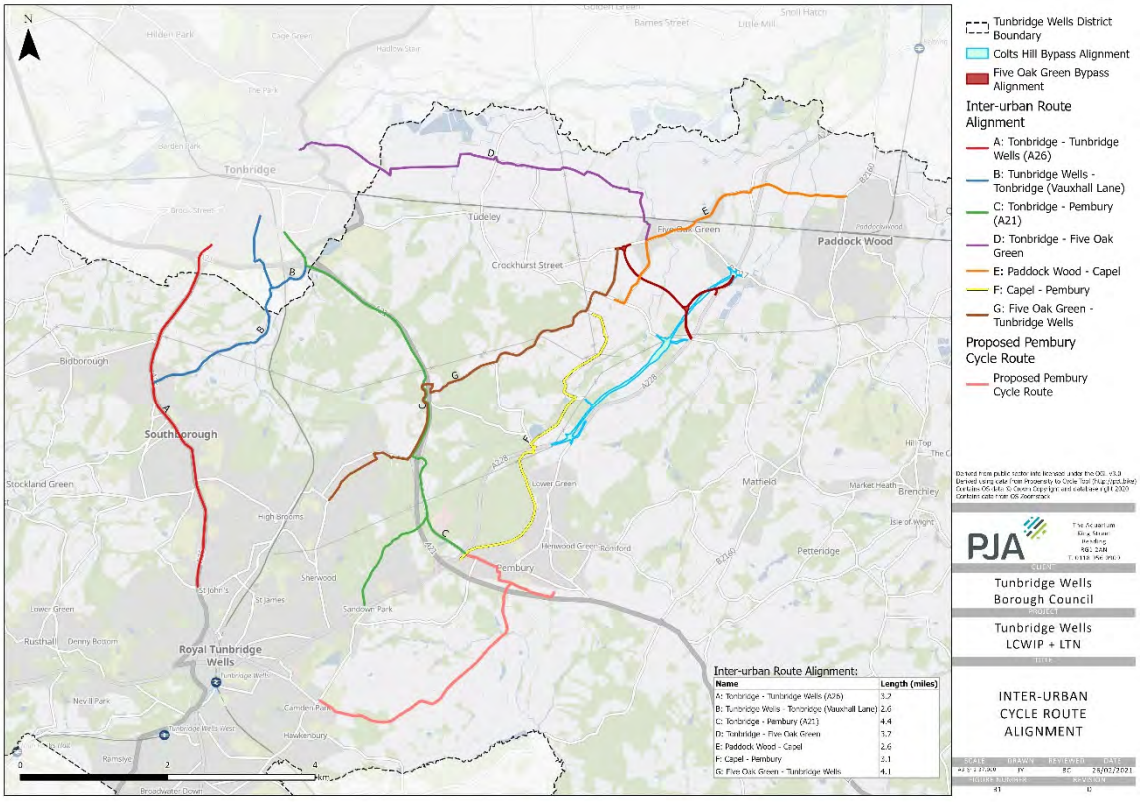


Figure 5-8: IUR Alignments

A majority of the alignments comprise of different route typologies which is likely to influence the future deliverability and feasibility of the alignments. Route D for example between Tonbridge and Five Oak Green is a combination of On-Carriageway (Minor Roads), Private Routes, and PROW. The on-carriageway sections of this route should be relatively straight forward to deliver in terms of feasibility, whilst the Private Routes and PRoW are likely to have more complicated design development as they are reliant on securing access agreements on private routes and 'Creation Agreements' for the PRoW. For comparison, Route A is exclusively focussed on-carriageway along the A26 and its deliverability therefore is completely dependent upon the ability to create on-road

facilities along that route. Route A also has the advantage of the EATF and proof from that layout that there is sufficient space within the highway to install protected cycle facilities in both directions along the route.

Table 5-1: Inter-Urban Route Alignments

Name	Origin-Destination	Key stops en route	Length (miles)
A	Tonbridge – Tunbridge Wells (A26)	Southbourgh, and Bidborough	3.2
B	Tunbridge Wells – Tonbridge (via Vauxhall Lane)	Southborough, and Tonbridge Cottage Hospital	2.6
C	Tonbridge – Pembury (A21)	RSPB Tudeley Woods, and Longfield Road Trading Estates	4.4
D	Tonbridge – Five Oak Green	River Medway, Tudeley, and Capel	3.7
E	Paddock Wood - Capel	Five Oak Green, Whetsted, and Capel	2.6
F	Capel - Pembury	Pembury, and Kent College	3.1
G	Five Oak Green – Tunbridge Wells	High Brooms, Longfield Road Trading Estates and Capel	4.1

5.7 Level of Service Assessments

Level-of-service assessments on all alignments were completed to review existing conditions for cycling and the scope for providing improving facilities. The Level of Service assessment from the DfT's Local Transport Note 1/20 was used to summarise each inter-urban route and a description of each of the five main factors is described below.

The Level of Service tool uses a simple Red Amber Green (RAG) scoring system to score routes. There are 25 x scoring factors in the assessments spread across the five themes listed below. Additional commentary has been provided on the identified Alignments where key points are not considered directly through the LoS assessment, for example the LoS does not consider the general setting of cycle routes and the extent to which they feel welcoming to cycle on. Equally, the IUR routes generally scored lower on some criteria due to the inherent nature of the IUR routes, particularly criteria related to surveillance, lighting, and the provision of dedicated cycle infrastructure.

- **Cohesion**: Considers how well integrated routes are within wider cycling networks both in terms of the provision of dedicated cycling infrastructure and wayfinding to help improve legibility of routes. The Cohesion factors also consider intra-route cohesion and the consistent provision of cycle infrastructure throughout a route. The proposed IUR routes generally scored poorly on this category due to lack of current infrastructure and wayfinding to help navigate the routes. It was assumed that a wayfinding strategy would be developed in future to label the IUR network which would significantly enhance the network's cohesion.

- **Directness**: Compares the directness of cycle routes relative to equivalent vehicle routes, and considers delays caused to cyclists on links and at junctions. The impact of gradients along a route are also included particularly where gradients exceed 2% for a prolonged section. A majority the IUR alignments closely follow the 'as-the-crow-flies' alignment and therefore scored well on this point. IUR alignments that intersected with major junctions tended to score lower due to the delays caused by trying to cross the junctions.
- **Safety**: The focus of safety is the extent to which cyclists are exposed to vehicular traffic and how this impact upon the safety of using a route. The safety criteria specifically consider volumes of vehicular traffic, vehicles speeds, carriageway design, and surface quality. Sections of IUR alignments which followed Private Roads, PRoWs and Shared Use paths tended to score well on Safety as the risk of interaction with vehicular traffic had been significantly reduced. Sections which followed on-road alignments, particularly main roads, scored poorly as there are not currently facilities to protect cyclists.
- **Comfort**: Considers the quality of cycling facilities in terms of surface quality, width of cycling facilities and availability of wayfinding
- **Attractiveness**: Assesses the social safety of routes, interaction with pedestrians, impact of any street clutter on cycling, and the availability of cycle parking.

5.8 Level of Service Assessments – Findings

The following tables describes the existing cycling conditions on each of the routes and summarises the performance of each route against the key themes from the LTN 1/20 Level of Service (LoS) Tool. Design recommendations have been prepared for each route in response to the LoS findings supported by key design considerations for the next steps for each route. Best practice examples have also been included at the end of the chapter (with further examples in the appendix) which help to illustrate key recommendations for the Inter-Urban Routes on specific points, including design, signage + wayfinding, and traffic management.

Route A: Tonbridge – Tunbridge Wells (A26)

Route Description

Route A would follow the A26 route connecting the centre of Tunbridge Wells with Tonbridge town centre. This is the most direct connection between the two towns and has long been recognised by TWBC and TMC as a key connection to develop for cycling. Sections of cycle lane and bus lane are provided along the route however the provision is not continuous and does not provide protection for cyclists from vehicular traffic including buses.

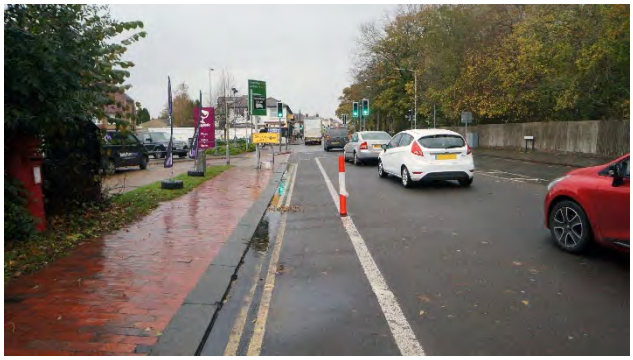
As part of their Emergency Active Travel Fund (EATF) measures, Kent County Council (KCC) have installed sections of light-segregation along the route to protect cyclists from vehicular traffic. At the time of writing, TWBC and KCC were considering alternative design arrangements for the segregation as unfortunately many of the 'wands' used to separate cyclists had been removed (the LoS assesses the design layout prior to the EATF measures).

As part of this commission, PJA has developed Concept Designs for the installation of continuous protected cycle facilities on the A26 and the designs are appended to this report. The concept designs are based on the below key design principles:

- 2m wide uni-flow cycle tracks (1.5m minimum) between Grosvenor Road to Birchwood Avenue. Uni-flow protected cycle tracks are the preferred design arrangement as they are generally easier to access and more intuitive to other road users and pedestrians.
- 3m wide bi-directional cycle tracks (2.5m minimum) between Birchwood Avenue and Borough Boundary. The carriageway is narrower north of Birchwood Avenue and therefore bi-directional tracks provided the more practicable arrangement to ensure continuation of the protected facilities.
- Throughout the design, the minimum two-way carriageway width is 6m and 2m wide footways have been proposed where feasible (With an absolute minimum width of 1.2m in some short sections).
- Continuous footway treatments are proposed at all side-entry junctions within the Tunbridge Wells section of the route to enhance pedestrian comfort at junctions, as well as raising awareness of both the cycle track and pedestrians crossing.
- Protected cycle facilities at all major junctions (where feasible) without major alterations to existing current traffic signal layouts. Typical protected facilities include protected corners to remove conflict between turning cyclists and vehicles, mini-zebra crossings over cycle track for cycle access, and cycle movements to run concurrently with pedestrian phases to minimise exposure of cyclists to vehicles.

Route Typologies: On-Carriageway (Main Roads)






Photos: St. John's Road, A26 (All Photos)

Level of Service Commentary

Cohesion: There are currently no protected cycle facilities on the route which undermines the level of service for cycling. The route also scores poorly for continuity and onward connectivity. However, the A26 is a key route between Tunbridge and Tunbridge Wells and therefore provides many opportunities along the alignment for connecting into adjoining streets which results in a positive score for cohesion 'density'.

Directness: Route A is proposed to follow the current road alignment and therefore scores highly for directness. An issue for the route is the inability of cyclists to bypass queueing vehicles on the route at busier junctions.

Safety: The route scored poorly on the issue of safety due to the level of exposure of cyclists to vehicular traffic along the A26. This issue related to the exposure both to the speed and volumes of moving vehicles, and kerbside activity and cyclists' inability to safely pass parked vehicles.

Comfort: The route scored poorly due to the lack of current facilities on the A26. The short sections of the A26 contained within the bus route scored higher as they were not mixing with general traffic.

Attractiveness: This factor considers the contribution of signage, street lighting, surveillance, and interaction with pedestrians on cycle comfort. Route A scored well against the factors related to lighting and pedestrian interaction, however the isolated sections of the route and the lack of cycle parking reduced the score for attractiveness.

Current Level of Service Total Score = 34%

Level of Service Sub-Scores

Cohesion	Directness	Safety	Comfort	Attractiveness

Design Recommendations

The key recommendation for Route A is providing a comprehensive and continuous protected facility for cyclists following the full alignment. The appended concept designs for the A26 corridor demonstrate that it is feasible within the current layout to provide these facilities through the rationalisation of the existing highways layout, including removing turning pockets and surplus carriageway, to enable more space for cycling. This approach would require the upgrade of controlled junctions and side-entry

junctions throughout the alignment to ensure that they are compatible with the protected cycle facilities. The bi-directional facilities proposed north of Birchwood Avenue would enable continuation of the facility to Tonbridge.

Route B: Tunbridge Wells – Tonbridge (via Vauxhall Lane)

Route Description

Route B would provide a short connection between Tunbridge Wells (London Road, A26) and Tonbridge (Pembury Road, A2014) following Vauxhall Lane. This route would complement the proposed cycle facilities on the A26 and existing shared use facilities on the A21. Whilst vehicular traffic levels are low on Vauxhall Lane, vehicle speeds can be intimidatingly high on the narrow lanes with no dedicated cycling facilities.

There are two alignment options north of the Vauxhall Lane junction with Mabledon Farm, a) following Vauxhall Lane to the existing shared use facilities to connect with the A21 and Vauxhall Roundabout, or b) use the existing PROW route which passes Tonbridge Cottage Hospital and connects with Deakin Lees in Tonbridge.

Route Typologies: On-Carriageway (Minor Roads), Shared Use, PROW



Photos: Vauxhall Lane (Top Left), Public Footpath, MU54 nr. Tonbridge Cottage Hospital (Top Right and Bottom Right), Link to Deakin Leas, MU54 (Bottom Left)

Level of Service Commentary

Cohesion: The future route scores well on Cohesion as it would connect existing A21 facilities with the A26 and contribute to the overall network density. The current lack of dedicated facilities however means that the route scores poorly on the point of continuity which focusses on the intra-continuity of facilities along routes.

Directness: The proposed alignment would follow Vauxhall Lane and therefore scores well for Directness. The proposed Option B which would use the PROW would provide a shorter and more direct alignment than the vehicle equivalent and therefore would score more positively.

Safety: The limited volumes of vehicular traffic along Vauxhall Lane help to improve the scores for safety, however the poor condition of the carriageway and cyclists sharing the carriageway with vehicular traffic reduces the score.

Comfort: Poor maintenance and a lack of wayfinding reduces the score for Comfort.

Attractiveness: The nature of the route means it will generally score poorly due to its relative isolation and lack of passive surveillance. This will be a key consideration in the development of the IUR network and how routes are designed to feel welcoming and attractive.

Current Level of Service Total Score = 50%

Level of Service Sub-Scores

Cohesion	Directness	Safety	Comfort	Attractiveness

Design Recommendations

The main issue raised by the LoS is the risk caused by exposure to vehicular traffic along Vauxhall Lane and reducing the scope for this conflict would significantly enhance the cyclability of the proposed alignment.

- The main recommendation therefore is to reduce volumes of vehicular traffic on Vauxhall Lane using a 'Quiet Lanes' approach which would include the use of traffic orders and/or modal filters. More information on the Quiet Lanes approach is provided later in this chapter as they have been recommended on several sections of the Inter-Urban alignments which are routed along country lanes. The general maintenance and lighting along Vauxhall Lane should also be reviewed to further improve cycling comfort along the route.
- Upgrading the section of PROW (MU54) would significantly enhance the route's integration with the wider cycle network into Tonbridge however this section of path is particularly steep and would be challenging to cycle towards Tonbridge. More detailed work would be required to understand the feasibility of installing the route both from a design perspective and for land ownership.
- Pursuing this alignment via MU54 would require improvements to the existing gates and entrances into the field and across the footbridge over the A21 Tonbridge By-Pass which are currently not accessible with a bike. Cycling is prohibited on the section of path connecting Deakin Lees with the A21 footbridge. This prohibition would need to be removed as well as trimming back existing overgrown vegetation on the path to make it more comfortable for both walking and cycling.

Route C: Tonbridge – Pembury (A21)

Route Description

Route C follows the existing cycle facilities that are provided alongside the A21 between Tonbridge and Pembury. The existing facilities along the route are a combination of Shared Use and Access-Only Roads which minimise interaction between cyclists and vehicular traffic. The level of service throughout is consistent, continuous, and easy to follow which creates a comfortable route to cycle. Importantly, the A21 also provides connections with adjoining IUR routes, including Half Moon Lane, Blackhurst Lane, and Longfield Road, which should allow the A21 to form the spine of the IUR network.

The site audits identified some local improvements related to wayfinding, maintenance and junction treatments that would help to further enhance the route.

Route Typologies: On-Carriageway (Minor Roads), and Shared Use paths

Photos: Vauxhall Roundabout (Top Left), Shared Use path parallel to A21 (Top Right and Bottom Right), Link between Tonbridge Road and Blackhurst Lane (Bottom Left)

Level of Service Commentary

Cohesion: The route provides a continuous and legible off-road facility throughout the alignment alongside the A21 with signposted connections to other adjoining routes. The site audits identified some existing wayfinding, particularly at the junctions with Longfield Road and Half Moon Lane/Pembury Walks, where the existing wayfinding needs review to ensure the directions are consistent in their directions.

Directness: The proposed runs parallel to the A21 and therefore matches the directness of the equivalent vehicular route. The bridged connection over the A21 to Blackhurst Lane provides a very effective shortcut between the A21 and Pembury Road (A228) and scores positively as this is significantly shorter than the equivalent vehicle journey.

Safety: The cycle route alongside the A21 provides a traffic-free route for a majority of the alignment except for short sections of access-only carriageway. Therefore, the overall Safety scores are high throughout the route. The one area for improvement is around the section of shared use path on the Pembury Road (A2014) in Tonbridge which is quite narrow in places and the crossing points at the Vauxhall Roundabout could be improved. The importance of this section of Pembury Road is likely to increase in time as more cyclists use this section of the route.

Comfort: The surface quality and lighting is consistently high along the route except for the narrow sections of shared use path alongside Pembury Road (A2014), and along the link to Blackhurst Lane. There were also issues with maintenance on the section of path between Blackhurst Lane and the A21 with overgrown vegetation reducing the effective width of the path, and leaves causing slippery conditions on the track itself. Cycling is currently prohibited over the footbridge despite the presence of the ramp which is sufficiently wide to allow opposing cyclists to pass each other.

Attractiveness: The route is lit throughout which increases its attractiveness. Despite the presence of the lighting, the relative isolation of the route from activity reduces passive surveillance of the route (as per many of the IUR routes) which reduced the score. The shared use facilities are generally wide enough for sharing with pedestrians and footfall is generally low along the route.

Current Level of Service Total Score = 90%

Level of Service Sub-Scores

Cohesion	Directness	Safety	Comfort	Attractiveness

Design Recommendations

Much of the route achieves a high level of service however there are a few small improvements which would further enhance the route. These are mainly focussed on wayfinding, maintenance, and onward integration of the route within Tonbridge and North Farm in Tunbridge Wells.

- The directions on some of existing wayfinding fingerposts is confusing in direction and includes duplicate destinations on some posts which should be reviewed. This is a particular issue around the A21's junctions with Longfield Road and Half Moon Lane/Pembury Walks with inconsistent labelling of destinations.
- The existing shared use facilities between Pembury Road (A2014) and the A21 facilities should be improved to provide a wider, more comfortable facility for cycling which is integrated into Tonbridge's cycle network. This is beyond the remit of TWBC but should be considered as a future opportunity to strengthen the connectivity of the IUR network.
- The Vauxhall Roundabout is a key barrier to movement between Tonbridge and the A21 facilities. Shared use facilities are provided on the western half of the junction however these are no controlled crossing points at the junction for pedestrians and cyclists. Controlled crossings should be considered on the Pembury Road/ A21 Slip Road/Vauxhall Lane arms of the junction which would at least join up the existing shared use facilities.
- The access points in advance of the A21 footbridge connecting with Blackhurst Lane should be reviewed as the current 'A-Gates' prevent cycle access even though cycle-friendly ramps are provided over the bypass. The maintenance of the path towards Blackhurst Lane should also be reviewed as the path was completely covered in foliage during the site audits

Route D: Tonbridge – Five Oak Green

Route Description

Route D has been identified to provide an alternative east-west link to the B2017 (Tudeley Road/ Five Oak Green Road). The proposed alignment would follow Postern Lane/ Hartlake Road/ Sherenden Road/ PROW routes towards Subject to future developments in the area, the route would offer an important link between these sites. The mixed nature of the route will affect its future feasibility and deliverability as development of different sections of the route will require different design approaches.

The alignment follows a mixture of route typologies connecting Tonbridge with Five Oak Green, and potentially onward to Paddock Wood via IUR Route E. Sections of the western half of the route are already cyclable however these are currently using private roads with no public access. The eastern half of the route (beyond Hartlake Road) would follow existing unsurfaced PROW routes which are not currently available for cycling.

Route Typologies: On-Carriageway (Minor Roads), Private Routes, and PROW




Photos: Postern Lane (Top Left and Bottom Right), Private Route nr. Latter's Farm, Tudeley (Top Right), Public Footpath WT169 between Tudeley and Five Oak Green (Bottom Left),

Level of Service Commentary

Cohesion: The current Coherence is unsurprisingly very limited as Route D is not recognised as a cycle route and consequently there is no wayfinding along the route and no onward connections. In future, the route could provide an important east-west link for several adjoining routes and developments in the area.

Directness: Currently, the full extent of the route is not cyclable which results in a low score for Directness. However, the completed proposed alignment would be more direct and shorter than the equivalent vehicle journey (Tudeley Road - B2017) as it would use access-only and PROW sections of route.

Safety: The low-traffic nature of the route means that it scores reasonably well for safety as cyclists' exposure to vehicular traffic is limited, and this would be further enhanced if the PROW section were upgraded to enable cycle access. The short section of route using Hartlake Road would need further review as cyclists would be expected to cycle on carriageway where the current speed limit is 60mph.

Comfort: The route scores poorly against the Comfort criteria as existing surface quality is poor and there is no wayfinding to support legibility along the route. It is assumed the completed future route would improve the Comfort score as new sections of path would be provided combined with low-traffic streets which minimise interaction with vehicles.
Attractiveness: The route scores lowly against the isolation and passive surveillance criteria however this is unlikely to change given the route's remote location. Improving the quality and availability of lighting, as well as providing cycle parking would help to increase the route's attractiveness.

Current Level of Service Total Score = 48%

Level of Service Sub-Scores

Cohesion	Directness	Safety	Comfort	Attractiveness

Design Recommendations

The delivery of Route D will require a multi-faceted approach that responds to the individual typologies contained within the alignment. The western half of the route between Tonbridge and Hartlake Road is already cyclable however would require access permitted, whilst the eastern half requires an upgrade of the existing PROW to enable cycle access and the creation of a new surfaced path. The design recommendations have been grouped based on these different typologies:

- **Onward to Tonbridge –** It is recommended that a controlled pedestrian and cycle crossing is installed on Vale Road to enable the Postern Lane route to connect onward with the Public Footpath (MU33) which then follows the River Medway into the centre of Tonbridge. The crossing would also improve connectivity to Public Footpath MU32 which is routed along the northern side of the River Medway.

- **Private Routes (MU33, WT165)** – The highways ownership extents need clarification to confirm the status of current access arrangements on Postern Lane. Engagement with relevant landowner/s should then be undertaken to explore the feasibility of enabling through cycling access. There are currently no barriers to cyclists using Postern Lane and the lane is surfaced throughout. There should not therefore be a requirement for significant design changes to enable cycling.

- **On-Carriageway (Hartlake Road + Sherenden Road)** –Hartlake Road (230m) and Sherenden Road (570m) provide a short on-carriageway section between Postern Lane and the PROW. Hartlake Road is currently a narrow 60mph rural lane connecting Tudeley and Golden Green with no footway provided. Given the limited carriageway dimensions, the recommendation is to consider installing a short section of path on the eastern side of Hartlake Road to connect the routes. Installation of a path would require consultation with the local landowner to establish feasibility for installing a route. Two initial options have been identified, a) culvert the existing ditch and construct a route on top, or b) construct a path on the eastern side of the culvert with access points installed to connect with Hartlake Road.

- **PROW Sections (WT Nos. 158/163/169)** – Establishing the highways/land ownership along the PROW routes will be the first step in defining the feasibility of upgrading the PROW ideally to a Bridleway to ensure both cycle and equestrian access. 'Highway Act Section 25 - Creation Agreement' is the mechanism which will allow the installation of a surfaced path if the current landowners support the conversion of the PROW. Engagement will also be required with KCC PROW officers to understand the design scope and their willingness to invest in the path upgrade as part of their wider programme of creating active travel and recreational routes.

Route E: Paddock Wood – Capel

Route Description

Route E was identified as an important connection between the north-west of Paddock Wood with Five Oak Green, and onwards to Capel. The route would use a combination of existing Public Rights Of Way, and road-based routes. A majority of the alignment can currently be cycled however the on-street conditions on Five Oak Green (B2017) and Whetsted Road are uncomfortable for cycling and these would need to be improved in the future. The alignment of the route through Five Oak Green presents an opportunity for wider public realm improvements to the village centre to reduce the impact of vehicular traffic and the B2017 which currently dissects the village.

It is likely that Route E would be developed alongside or within some of the major developments proposed in the area and it is important therefore that this route is incorporated within those projects.

Route Typologies: On-Carriageway (Minor Roads), Private Routes, and PROW



Photos: Public Footpath WT176 between Paddock Wood and Five Oak Green (Top Left and Bottom Left), Five Oak Green at junction of Whetsted Road/Badsell Road (Top Right), Whetsted Road approach to Five Oak Green (Bottom Right)

Level of Service Commentary

Cohesion: The current lack of dedicated cycling facilities along the alignment means that it scores poorly for cohesion. The main challenge for the development of the route will be creating a connected facility with a particular focus on providing crossings points over Maidstone Road (A228) and Alders Road (B2017).

Directness: The alignment of Route E and its use of PROW means that it is inherently more direct and shorter than the equivalent vehicle route. The delays experienced by cyclists currently are unlikely to reduce significantly in the proposed scheme although the recommendation would be to improve the crossing of the Maidstone Road and to improve crossing facilities in general along the alignment for both pedestrians and cyclists.

Safety: Safety along this alignment is largely defined by the extent of exposure to vehicle traffic for cyclists. The eastern half uses a public right of way and therefore exposure to vehicles is minimal, however the western half follows Whetsted Road and then Five Oak Green - both on-road sections are uncomfortable for cycling and there are many pinch points along these routes mixed with high volumes of vehicle traffic. The design focus to improve the safety aspects will need to consider the wider environment through Five Oak green and how it addresses the balance of being the village centre whilst also being an important connection.

Comfort: Comfort for cycling varies along the route mainly due to the different route type ologies which use different materials. The key focus for improving comfort will be on reviewing on street conditions along Whetsted Road and Five Oak Green Road, and how this environment improves conditions for cycling. Conditions will also need to be reviewed along Sychem Lane which currently has a 60mph speed limit no facilities for cycling.

Attractiveness: The current attractiveness of the route varies with the quieter sections of the route already pleasant to cycle along, however the busier road-based sections will need further improvement as previously discussed to create a more welcoming and attractive environment. This is likely to focus on Five Oak Green which has the potential to be the conduit several cycling routes and walking routes through the area.

Current Level of Service Total Score = 42%

Level of Service Sub-Scores

Cohesion	Directness	Safety	Comfort	Attractiveness

Design Recommendations

The focus for improving Route E will be on enhancing its connectivity and providing a continuous route between Paddock Wood and Capel. Particular attention needs to be focused on the village centre in Five Oak Green and how the impact of vehicular traffic can be reduced. Beyond Five Oak Green, changes will be required to the existing on-road sections to improve conditions for cycling.

- WT176 east of Maidstone Road will require conversion from a Public Footpath to enable cycle and equestrian access. This section falls within the proposed development parcels around Paddock Wood and therefore is likely to be incorporated within those masterplans.

- A crossing will be required to enable safe at-grade crossing of the Maidstone Road for both pedestrians and cyclists on WT176. The recommendation is that this crossing is installed south of the Capel Cottage Garden Nursery. To enable installation of an at-grade crossing, the Maidstone Road speed Limit would need to be reduced to a minimum 50mph (ideally 40mph) supported with installation of footway on both sides of the Maidstone Road to connect the crossing.

- There is a short section of public footpath (WT176) between Whetsted Road and Maidstone Road which will need to be reviewed for access agreements as this forms the most direct and convenient connection between the two main roads.

- Whetsted Road (between Maidstone Road and Five Oak Green) is a semi-rural/residential 400m section of route however it has a 60mph speed limit which severely undermines the route's comfort and attractiveness for cycling. The recommendation is to extend the 30mph speed limit east from Five Oak Green to the junction with Whetsted Road.

- Rather than focussing exclusively on walking and cycling improvements, the recommendation is to develop a more holistic approach which promotes Five Oak Green Road and Whetsted Road as the village centre rather the main thoroughfare. This approach should extend north of the railway line to include Whetsted Road up to the village boundary. This approach will need further exploration, but it is envisaged that the key design features would include Gateway features on key approaches to village, Installation of controlled crossings on Five Oak Green Road, Public realm scheme at centre of village at Five Oak 'Green' and localised footway widening

- The northern half of Sychem Lane is a residential street and comfortable to cycle on however the southern half is a narrow rural lane with a 60mph speed limit. It is recommended that a 'Quiet Lanes' treatment is used on this section of Sychem Lane including gateway treatments at each end of the lane to remind vehicles of the nature of the road and to extend the 30mph speed limit south to Alders Road. A modal filter could also be considered which would remove through traffic and therefore improve conditions for walking and cycling along the lane.

Route F: Capel – Pembury

Route Description

Route F would use a combination of existing minor roads and PROW (WT231) to connect Capel with Pembury and onwards to NCN 22. The existing minor roads of Amhurst Bank Road and Red Wings Lane are already low traffic environments which can be cycled between Capel and the south side of Pembury. The additional PROW Section would provide a parallel traffic-free route to Maidstone Road around the edge of Pembury. The main challenge in the delivery of this route will be converting the existing PROW section to a surfaced Bridleway that is suitable for cycling.

Route Typologies: On-Carriageway (Minor Roads) and PROW




Photos: WT231 nr. Pembury (Top Left), Public Footpath WT244 nr. Capel (Top Right), Church Lane (Bottom Left), Redwings Lane (Bottom Right)

Level of Service Commentary

Cohesion: The route is inherently natural to follow as it uses the same route all the way to the edge of Pembury. The current isolated nature of the route however undermines its connectivity and coherence however wayfinding along route will help in future to provide a more connected facility. The PROW proposal for the southern section of the route will be fully integrated into the existing network and connect with NCN22.

Directness: The isolated nature of the rural roads which the route follows generates a good score against directness as cyclist would not be expected to stop very often when using the route. Furthermore, the inclusion of the PROW within the alignment will further improve directness as cyclists will have a shorter and more direct route compared to the nearest vehicle route. Gradient could be a potential barrier on the PROW section of the route as it is part of a decline incline towards Pembury at the southern end of the alignment

Safety: Vehicle speeds and flows along the rural roads are generally low throughout which is why they have been identified as an opportunity for developing a cycle route. However, the constrained nature of the rural highways reduces the design scope for introducing dedicated cycling facilities. Instead, it is likely that a low traffic environment will need to be created which minimises interaction between vehicles and cyclists. The key recommendation is to pursue a 'Quiet Lanes' approach with potential inclusion of modal filters to minimise interaction between cyclists and pedestrians with vehicles. The quality of maintenance and road surfacing would need more detailed reviewing through the development of this route to ensure that this does not undermine comfort along the route.

Comfort: As mentioned previously the state of maintenance and surface quality will need more detailed reviewing to ensure that a comfortable route is provided for cycling and the proposed PROW section of route will need to be surfaced to a high standard. The narrow nature of the residential roads limits the scope for developing cycling facilities and instead the design will need to encourage low traffic environments to overcome the issue of comfort for cycling on these routes.

Attractiveness: There is currently limited lighting and no wayfinding along the route however it is assumed that the design development will address these points and ensure that the route feels comfortable to use at all times of day with continuous wayfinding provided. Cycle parking should also be included at key destinations along the route.

Current Level of Service Total Score = 44%

Level of Service Sub-Scores

Cohesion	Directness	Safety	Comfort	Attractiveness

Design Recommendations

The northern section of the route on Amhurst Bank Road and Red Wings Lane is currently cyclable however the on-street conditions would need a more detailed review to understand what physical improvements are required to make the route fully cyclable. Given the design constraints on the country lanes, the key recommendation is to introduce 'Quiet Lanes' on these routes potential complemented by modal filters to remove vehicular traffic if vehicle flows >1000 vehicles per day.

The eastern footway of Old Church Road provides a short connection (30m) between Redwings Lane and the ramp up to A228 footbridge. This section of path should be widened to provide a more comfortable connection which could be achieved by trimming back exiting vegetation.

South of the A228 footbridge, there two potential alignments to follow into Pembury:

- Public Footpath WT231 would connect footbridge with NCN22 around the west of Pembury, with alleyways along the route connecting into the adjoining neighbourhoods. It would provide a direct and traffic-free route however further investigation will need to understand the design requirements to upgrade the existing path to be suitable as a bridleway for both cycling and equestrian activities. It is assumed that the existing footpath would require widening and surfacing throughout to provide a comfortable surface.
- Alternatively, there is a short path that connects onto Church Road however cycling is currently prohibited. Further exploration would be needed to understand the status of this path and the scope for enabling pedestrian, cycle, and equestrian access.

Route G: Five Oak Green – Tunbridge Wells

Route Description

Route G would connect Tunbridge Wells with Five Oak Green using existing shared use facilities up to the A21 and then quieter rural lanes to Five Oak Green. Much of the infrastructure already exists in the southern half using shared use facilities however localised improvements could further enhance the route. The shared use path on Longfield Road then joins the recommended LCWIP cycle route on Home Farm Lane. The main challenge in the delivery of the route will be minimising the conflict between cyclists and vehicular traffic on Half Moon Lane, Alders Road and Church Lane. The recommendation on these sections is to consider the introduction of a Quiet Lanes designation which would reduce through-traffic access, and therefore minimise this risk.

Route Typologies: On-Carriageway (Minor Roads), Private Routes, and PROW



Photos: Shared Use parallel to A21 (Top Left), Half Moon Lane (Top Right), Shared Use facilities on Longfield Road (Bottom Left), Home Farm Lane (Bottom Right)

Level of Service Commentary

Cohesion: A majority of the alignment can already be cycled as it follows rural routes and then the existing shared use facilities on the A21 onto North farm. Introducing wayfinding and minor junction treatments along the rural sections of the route will help to enhance connectivity and cohesion and fulfil the roots current potential. The alignment will also provide an important connection to other existing routes and therefore help to contribute to the wider density of networks.

Directness: The route scores well for directness as it follows the existing vehicle route and then uses shared used facilities which are shorter and more direct than the equivalent vehicle journey. There are relatively few junctions and stopping points on the rural roads which improves the directness and reduces delay for cycling on those links. The shared use facilities enable cyclists to bypass most junctions en route and use dedicated toucan crossing points.

Safety: The main challenge for Safety along the route is the potential risk caused by sharing narrow rural roads with vehicular traffic. Whilst vehicle flows are reasonably low, the design development will need to better understand the number of vehicles using the road sections and explore opportunities for designation as quiet lanes as per other Inter Urban Routes. This is also an important consideration in the future of these routes and how they might be used by more vehicles in the future because of major residential developments in the Borough.

Comfort: The main challenge for cyclists' comfort along the route is addressing the balance of space and how vehicles and cyclists share the on road sections of Route G. The constrained nature of the rural sections mean that this is a key area for focus in the development of the alignment. The existing shared use facilities should also be reviewed as the existing paths could be widened to increase capacity and comfort. Alternatively, on-street facilities could be considered for improving conditions for cycling and walking through North Farm and onwards towards the town centre by re-purposing existing carriageway space for protected cycling facilities.

Attractiveness: As with the other IUR alignments, the attractiveness of the route in relation to isolation and lighting is limited due to the rule nature of the northern half of the route. The southern half generally scored higher as the route is close to activity and lit throughout. Opportunities to improve and widen the existing shared use path should be considered on the southern section to reduce the impact on pedestrian foot ways and provide a higher capacity facility for cycling. The current shared use paths are particularly narrow in points and not compliant with LTN 1/20. There are currently no facilities for cycle storage along the route and this should be a key consideration at the main destinations along Route G.

Current Level of Service Total Score = 56%

Level of Service Sub-Scores

Cohesion	Directness	Safety	Comfort	Attractiveness

Design Recommendations

It is possible to cycle the length of the route currently however the on-street conditions for cycling and the shared use pass could still be further improved for comfort and safety of cycling.

- The North Farm shared use path follows Longfield Road and connects the retail parks with the A21 junction. These facilities are continuous, lit, and well maintained however the width of the path is often <3m wide. The initial site review suggests that there could be scope for localised widening of the path into the adjoining vegetation however this would require a more detailed assessment. The remainder of the shared use path north to Half Moon Lane is comfortable to use and sufficiently wide given the low footfalls level, however there is a confusing arrangement on the Pembury Road Slip-Road slightly north of the entrance to Well Wood which should be simplified. There is a short section of footpath which is not shared use, and consequently cyclists must cross the slip road twice to continue northbound on the A21 Shared Use path. This section should be converted to shared use to enable route continuity.

- There is currently no crossing point to access from the shared use path to Half Moon Lane – it is recommended a dropped kerb is provided to enable this access. The key challenge on Half Moon Lane is reducing exposure of cyclists to vehicular traffic. As a minimum, the recommendation is to adopt a Quiet Lane approach which would include installation of gateway features to alert drivers to the change in road status. Removing through-traffic from Half Moon Lane would further reduce the scope for this conflict and reinforce the Quiet Lane's status.

- Alders Road is an important link which would connect Half Moon Lane/ Church Lane and Sychem Lane. Given the constrained highways arrangement, the recommendation is to pursue a 'behind hedgerow' approach which would install a short section of off-carriageway path within the adjoining land plots.

- A Quiet Lanes approach is recommended for Church Lane (between Alders Road and Five Oak Green Road) to allow the route to continue to Capel.

5.9 Key Design Features

This section provides information on design recommendations and general good practice measures which have been recommended previously in this chapter for the Inter-Urban Route Network. The examples help to illustrate typical approaches and includes examples of best practice from similar schemes elsewhere in the UK. Links have also been provided to useful online documents which provide further information on these points.

5.10 Rural Design Principles

Whilst the predominant focus of the Inter Urban Routes is to provide facilities for cycling, many sites were identified through the site audits which would benefit from more holistic street design changes which would reduce the impact of vehicular traffic and therefore provide more comfortable conditions for walking, cycling and other uses. This is a particular consideration in small villages, such as Five Oak Green which have a design dichotomy of being both a village centre and accommodating the B2017. There are also more discreet elements of street design and placemaking that could be incorporated on the minor roads within the network that would help calm traffic and generally make conditions more comfortable for on street cycling. This section introduces the key pieces of guidance on the subject which should be used for reference in the development of the IUR network.

5.10.1 'Traffic in Villages' (Hamilton-Baillie Associates/Dorset AONB)

http://hamilton-baillie.co.uk/wp-content/uploads/2017/12/hamilton-baillie-traffic-in-villages.pdf

Traffic in Villages was prepared as a toolkit to help rural councils and local groups understand the core principles for reducing speed, improving safety, and retaining local distinctiveness. The document has particular focus using physiological traffic calming measures within the public realm to reduce the impact of vehicle traffic and promote local distinctiveness in the design of villages. The document highlights how many villages find themselves increasingly with 'seemingly incompatible objectives' of accommodating increase in rural traffic whilst also protecting the attractiveness and viability of rural communities. Figure **5-9** overleaf is an example of the guidance provided to improve gateway features into villages and the types of measures that can be used to inform the transition from

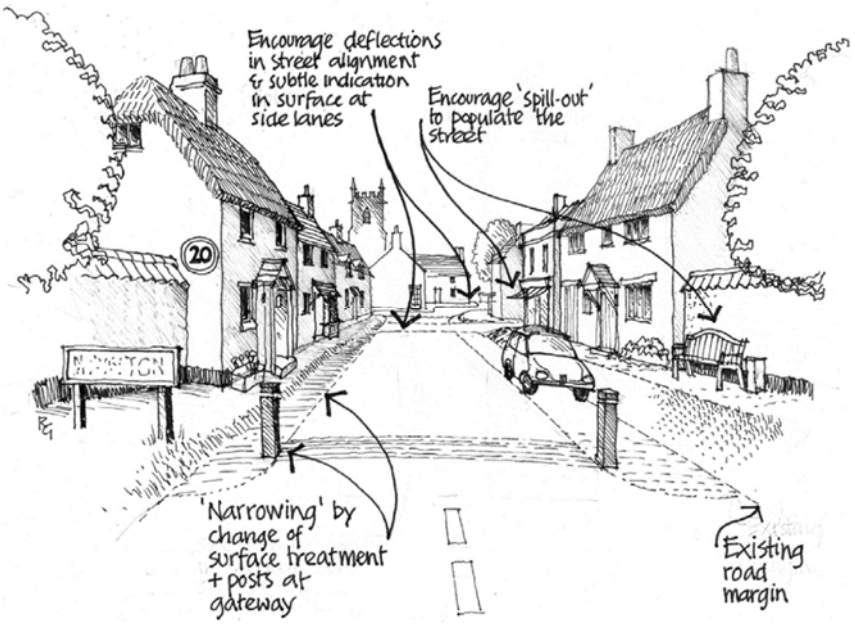


Figure 5-9: Excerpt from Traffic in Villages exemplifying gateway village improvements

The toolkit contains several design approaches and features that could be particularly relevant to the Inter-Urban Routes, including the below:

- **Speeds**: Aim to create environments which induce vehicle speeds that are comfortable and safe, and generally create smoother, steadier flows of traffic.
- **Slowing the Pace**: Designing streets with a typical width of 6m combined with further 'visual narrowing' will help as tools to reduce vehicle speeds
- **Entry Points**: Create clearly defined gateways into villages which help to change the character from 'road' to 'street'. Entry point measures should also consider using subtle changes in carriageway material and removal of surplus road markings
- **Heart of the Village**: Developing improvements around an identifiable heart will help to highlight the change in the character of streets and to communicate a sense of place.
- **Defining Meeting Places** Incorporating meeting places within the public realm will further help to punctuate the streetscape and emphasise local desire line
- **Case Studies:** The toolkit also includes several Case Studies to help illustrate the key design principles from across the UK

In addition to 'Traffic in Villages', similar documents have been prepared for the Kent Downs AONB and South Downs AONB which provide further guidance and examples for best practice:

- 'Rural Streets and Lanes: A Design Handbook' (Kent Downs AONB, 2009) https://s3-eu-west-1.amazonaws.com/explore-kent-bucket/uploads/sites/7/2018/04/18113912/Rural-Streets-and-Lanes-a-design-handbook.pdf

– 'Roads in the South Downs: Enhancing the safety and quality of roads and places in the National Park' (South Downs National Park, 2015) https://www.southdowns.gov.uk/wp-content/uploads/2015/09/Roads-in-the-South-Downs.pdf

Figure 5-10: Excerpt from Traffic in Villages exemplifying gateway village improvements

5.11 Low Traffic Environments

Reducing the scope for conflict between cyclists and vehicular traffic Is a critical consideration in the development of a comfortable cycling network, particularly on narrow rural lanes where there is limited design scope for providing protected facilities. On several IUR routes, this report recommends adopting the 'Quiet Lanes' approach which is based upon the assumption of low volumes of vehicle traffic and can be further reinforced with modal filters to remove through traffic. This approach also has synergies with the Low Traffic Neighbourhood (LTN) approach which is being recommended in Tunbridge Wells and Paddock Wood. This section provides more information on the Quiet Lanes legislation, and provides some example schemes to illustrate how quiet lanes have been installed.

Quiet Lanes

http://www.legislation.gov.uk/uksi/2006/2082/pdfs/uksiem_20062082_en.pdf

Local Authorities can designate country lanes as Quiet Lanes under the Transport Act 2000. Quiet Lanes are an essential tool in providing a safer environment for walking, cycling, and horse riding in rural settings. Quiet Lane designation is not supported with enforceable restrictions however the intention is that the designation combined with complementary design measures sets of level expectation for how the lanes should be used. To qualify for Quiet Lane status, a lane must: have less <1000 vehicles per day and have 85th percentile speeds of <35mph. On this basis, Quiet Lanes are typically used in single/narrow carriageway rural environments akin to those identified as Inter

Urban Routes in this document. As a design minimum, gateway features should be installed at the entrance/exit of the lanes and ideally should be supported with repeated wayfinding along the route. Several UK authorities have developed Quiet Lanes programmes including:

- Kent Downs AONB
- Oxfordshire 'Countryways' – Chilterns AONB
- Lancashire – Vale of Bowland
- Wiltshire – Vale of Pewsey

The Campaign to Protect Rural England (CPRE) produced a useful guide to developing Quiet Lanes and includes case studies on examples from East Sussex and Kent.

https://www.cpre.org.uk/resources/cpres-guide-to-quiet-lanes/

Jersey has also developed a similar concept known as 'Green Lanes' which has a similar set of objectives to Quiet Lanes

http://www.jersey.co.uk/jsyinfo/grenlane.html#:~:text='Green%20Lanes'%20is%20an%20exciting,the%20lanes%20except%20for%20access.

Figure 5-11: Quiet Lanes examples from Wilmslow, Stockport

The examples from Wilmslow and Byles Green illustrate typical gateway features which are the design minimum for Quiet Lane designation. Introducing design measures including traffic calming is a key tool in reinforcing the lane's status and can be further supported by modal filters which remove through-traffic access altogether to vehicular traffic except for local access. In the Inter-

Urban Route context, it is recommended that modal filters are considered to further reduce traffic flows below 1000 vehicles per day and the impact of through-traffic on Quiet Lanes.

Figure 5-12: Quiet Lane from Byles Green, Berkshire

5.12 Signage + Wayfinding

A key feature of the IUR network will be ensuring consistency and coherence as many of the IUR alignments are using more rural and therefore remote alignments which heightens the importance of providing a seamless network. Signage and wayfinding will be particularly important in more remote locations where there might not necessarily be dedicated cycle infrastructure to follow the route by.

As well as providing signage and wayfinding, developing a branding strategy for the IUR network would further help to raise awareness and present a cohesive concept to future users. This could present future opportunities to diversify the appeal of the network beyond just local cyclists and could help to promote the network as a destination in its own right. This section provides a brief overview of some similar examples sub branding of local cycle networks in the UK.

Northern Ireland Greenways *http://nigreenways.com/*

The NI Greenways project has a 25 year ambition to repurpose the country's >1000km of disused railways into a comprehensive traffic-free rural cycle network. The proposed network is based on two route typologies: 1) Primary Routes: longer-distance and more strategic connections and 2) Secondary Routes: Shorter more local routes that feed into the primary network. An initial 20 route plans have been developed by Department for Infrastructure, with a further three routes progressing to detailed design studies and delivery. The below links identified in purple in the below plan illustrate the completed routes.

Figure 5-13: Example of the NI Greenways Network Plan and Gateway Feature

***Greater Cambridge** Greenways* https://www.greatercambridge.org.uk/transport/transport-projects/greenways

Similarly to Inter-Urban Routes, the Greenways network is intended to connect surrounding local villages with Cambridge using a combination of existing and new cycle infrastructure. The Greenways' network consists of 12 x proposed routes which were initially identified and reviewed in 2016. The network will be primarily routed off-road; however sections of Greenways will be installed on local roads with <2000 vph and speed limits of <20mph. The findings from the 2016 study have since been used to secure funding for further design development and public engagement on the routes. Three Greenways routes are currently at outline business case stage.

Figure 5-14: Network plan of Cambridge Greenways

5.13 Protected Cycle Facilities

There is limited design scope on many of the identified routes for introducing protected cycle facilities due to the narrow nature of the highways and adjoining land. Some small sites were identified where protected facilities would be required: including:

- Short sections of shared use paths to connect routes and crossings (e.g. Old Church Road),
- 'Behind the hedge' schemes where a path would be installed in private land adjoining the carriageway (e.g. Alders Lane, Hartlake Road)
- Toucan crossings of main roads to connect routes (e.g. Maidstone Road (A228))

The design of any protected facilities should consult the recent LTN 1/20 on 'Cycle Infrastructure Design' to ensure that any proposed facilities are appropriate for their design context. Figure **5-15** from LTN 1/20 summarises the cycle infrastructure required relative to vehicle speeds and speed limits. The table highlights how many circumstances will require protected cycle facilities in some form unless vehicle speeds and traffic flows are particularly low. Understanding flows and speeds for the on-road sections of the Inter-Urban Network, particularly the proposed Quiet Lanes, will be a critical step in developing the network and understanding design feasibility.

Figure 5-15: LTN 1/20 Cycle Design Matrix

LTN 1/20 also includes guidance on the design of crossings relative to speed limits, traffic flows, and number of approach lanes. Figure **5-16** summarises which crossing types are appropriate in different contexts. The table illustrates that controlled crossings are required in many of the design scenarios provided, and particularly where the speed limits are >40mph.

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 5-16: LTN 1/20 Cycle Design Matrix

5.14 Indicative Inter-Urban Route Costings

The LCWIP guidance provides high-level costings which are recommended to generate initial costings for walking and cycling measures. The below table summarises costs from the LCWIP guidance and additional costs which would be relevant to the future costing of the Inter-Urban Routes. These costings have also been used to support the LCWIP measures and will be incorporated into the Paddock Wood Masterplanning & Infrastructure Study.

Table 5-2: Indicative Cost Estimates

Intervention Type	Description	Detail	Unit	Lower £ Estimate	Upper £ Estimate	Source
Junction/Crossing	Remodelled major junction	Cycle specific scheme	X1	£1,560,000	£1,610,000	LCWIP
Junction/Crossing	Toucan Crossing	n/a	X1	£58,000	£70,000	Wiltshire Council
Junction/Crossing	Remodelled major junction	Cycle scheme attached to junction	X1	£240,000		LCWIP
Signage	Comprehensive route signage	n/a	X1	£240,000		LCWIP
Cycle Route	Two-way segregated track	n/a	1km	£1,150,000	£1,450,000	LCWIP
Cycle Route	Two-way light segregated track	n/a	1km	£740,000		LCWIP
Bridge	Bridge upgrade to inc. cycle facilities	n/a	1km	£100,000	£500,000	LCWIP
Neighbourhood	Low Traffic Neighbourhood	Full LTN w/ modal filters + public realm	X1	£70,000		LB Waltham Forest
Inter-Urban	Quiet Lanes	Single road conversion w/TRO, signs + lines	X1	£4,500		Essex CC
Inter-Urban	Quiet Lanes	6 x roads in single area	X1	£16,000		Essex CC

6 Conclusions and Recommendations

This chapter briefly summarises the key recommendations for each of the three subprojects contained within the LCWIP+. Figure 6-1 summarises the combined outputs from the three projects to help illustrate their combined geographic scope. The plan helps to illustrate how the combined outputs would have a significant impact upon the quality of walking and cycling facilities in the borough, and in promoting alternatives to vehicular traffic in Tunbridge Wells. The recommendations are intended to provide an initial framework for delivery; however it is recognised that the choreography of the different projects is likely to change in time as funding and developments opportunities evolve.

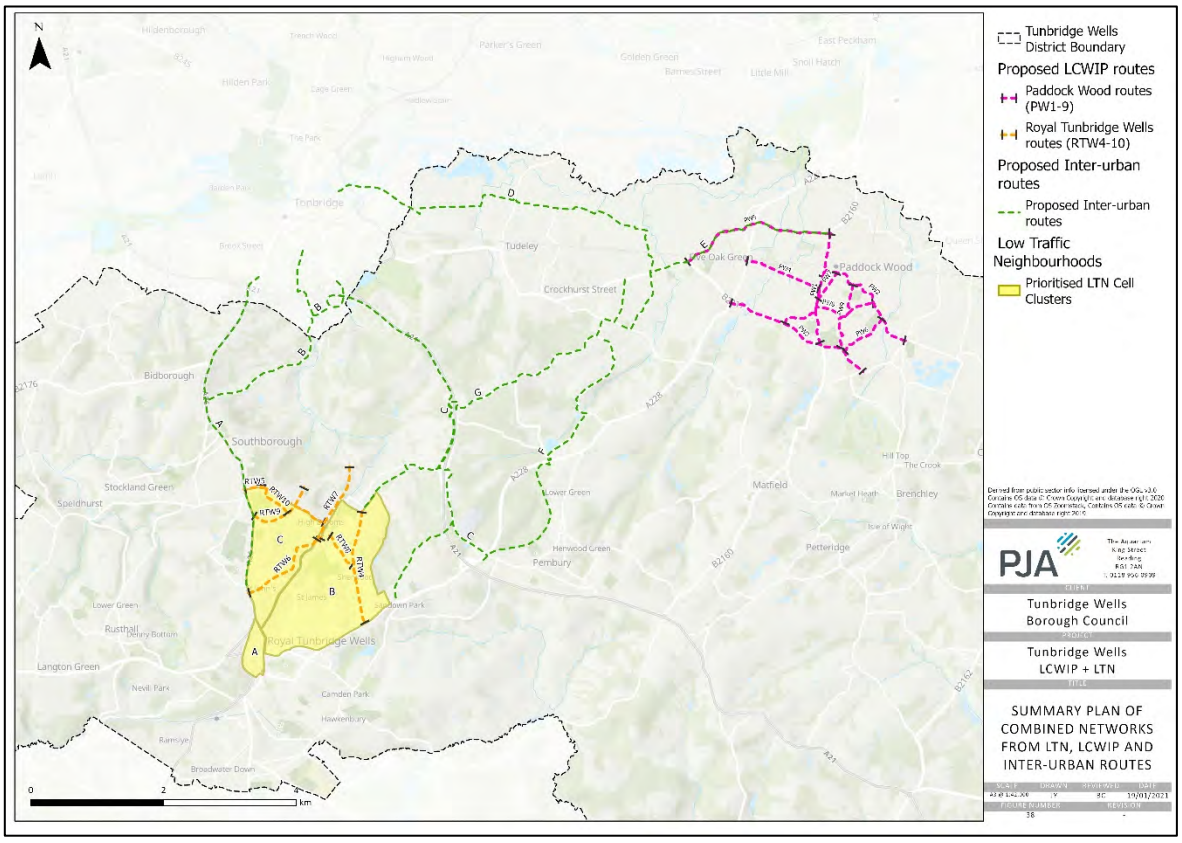


Figure 6-1: Summary of combined networks from LTN, LCWIP and Inter-Urban Route studies

6.1 Low Traffic Neighbourhoods

The LTN prioritisation identified an initial three clusters of individual cells which should be prioritised for delivery. As well as being closely located to each other, the cells were the highest scoring across the six prioritisation criteria and therefore offer the most potential to benefit from the LTN approach. Developing these clusters would have the added benefit of enhancing the existing LCWIP recommendations and for connecting onwards to the Inter-Urban Routes which are linked to the west of Tunbridge Wells. It should be noted that the prioritisation process offers one

approach to developing LTNs and that other UK authorities have used other methods to develop LTNs:

- **Birmingham City Council** identified their initial LTNs by focusing either on areas with existing local support or on areas which would require less interventions to create an LTN arrangement. Their Kings Heath LTN (https://www.kingsheathltn.co.uk/) was installed as part of the council's EATF responses in Summer 2020 comprising of five sub-neighbourhood movement cells. The Council are aiming to develop a city-wide LTN Prioritisation Strategy in 2021 to enable future development of LTNs.
- The **London Borough of Lambeth** has launched five LTNs as part of its EATF response. The Borough had already completed extensive stakeholder engagement and hosted a Borough-wide Commonplace exercise to gather views on the potential for LTNs. Additionally, the Borough considered the impact of future vehicle trips generated by development sites in the Borough and how these might influence local neighbourhoods. On this basis, they identified areas which were likely to be affected by increases in through traffic and installed modal filters in these neighbourhoods (https://ovalltnproposals.commonplace.is/overview).

Figure 6-2: Kings Heath Pilot LTN in Birmingham

6.2 LCWIP

LCWIP measures were developed in both Tunbridge Wells and Paddock Wood. The recommended cycle routes in Tunbridge Wells would further enhance the cycle network identified in the 2019 LCWIP. Two sets of design options were recommended 1) installing dedicated cycle facilities on the recommended main roads, and 2) developing parallel quieter routes as part of the LTN programme. the ultimate recommendation is that both sets of roots are delivered as part of the LCWIP however it is unclear at this stage on programming and time scales for the delivery of routes which is why both sets have been recommended in the final report.

In Paddock Wood, the LCWIP identified a series of prioritised design clusters for delivery of combined walking and cycling improvements in the town. Rather than focusing on specific routes, the clustered approach concentrates on key areas in the town which require improvements for both walking and cycling. The delivery of these measures should be co-ordinated with the wider programme of developments currently proposed for Paddock Wood.

6.3 Inter-Urban Routes

The purpose of the assessment was to identify and demonstrate that there are potential alignments to develop in the future as cycling routes between the Borough's main settlements. In effect, this stage has acted as a proof of concept to enable the future development of the seven routes identified. The examples from Section 5.9 help to illustrate how other UK authorities are delivering their own inter-urban networks. The findings from this study provide two potential options for this future development:

- **Route-Based**: this approach would focus on delivering the entire alignment as a single project. This approach would be better suited to those routes, for example Route A on the A26 and Route B on Vauxhall Lane, which use a single route typology for the entirety of the alignment.
- **Typology-Based**: Alternatively, sections of route could be developed based on the typologies identified in the report. For example, PROW routes could be incorporated into KCC 's rolling programme for their Active Travel and Recreational Routes programme. This approach might be more disjointed from a route perspective; however it could be an alternative means for concentrating effort on common issues and approach identified in the report. For example, the recommended Quiet Lanes could be developed and consulted on as a network of low-traffic routes.

Figure 6-3: Cycling on Postern Lane