North Northamptonshire Council

Kettering Local Cycling and Walking Infrastructure Plan (LCWIP)

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Contents

1.0 Introduction

1.1 Report Structure

This report is the Local Cycling and Walking Infrastructure Plan (LCWIP) for the town of Kettering in North Northamptonshire. The Kettering LCWIP aims to significantly enhance opportunities for cycling and walking across the town, for both commuting and leisure purposes. The LCWIP will also support the North Northamptonshire Council (NNC) ambitions to combat climate change.

LCWIPs, as set out in the Government's Cycling and Walking Investment Strategy, are a strategic approach to identifying cycling and walking improvements required at the local level. They enable a long-term approach to developing local cycling and walking networks, ideally over a 10-year period, and form a vital part of the Government's strategy to increase the number of trips made on foot or by cycle. While the preparation of LCWIPs is non-mandatory, Local Authorities (LAs) who have plans will be well placed to make the case for future investment.

By taking a strategic approach to improving conditions for cycling and walking, LCWIPs will assist LAs to:

- Identify 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.

The production of an LCWIP offers the LA the chance to strengthen local partnerships with National Highways, Network Rail and other stakeholders who can be influential in providing infrastructure to enable more walking and cycling. The LCWIP also provides an opportunity for the LA to demonstrate its commitment to related policy issues such as improved air quality, reduced emissions, improved public health through active travel, and improved access to education and employment.

The key outputs of LCWIPs are:

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

The development of the LCWIP consists of six key stages, as per the Department for Transport (DfT) guidance and as listed in Table 1-1.

Table 1-1 – LCWIP six-stage process

Stage	Name	Description
1	Determining Scope	Establish the geographical extent of the LCWIP.
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.

Stage	Name	Description
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.

The following figure displays the LCWIP process. As shown below, Stages 3 and 4 are conducted separately, as cycling and walking should be considered separately due to the different characteristics of the modes. The process for walking and cycling is then brought back together in Stage 5.

Figure 1-1 – LCWIP process flowchart

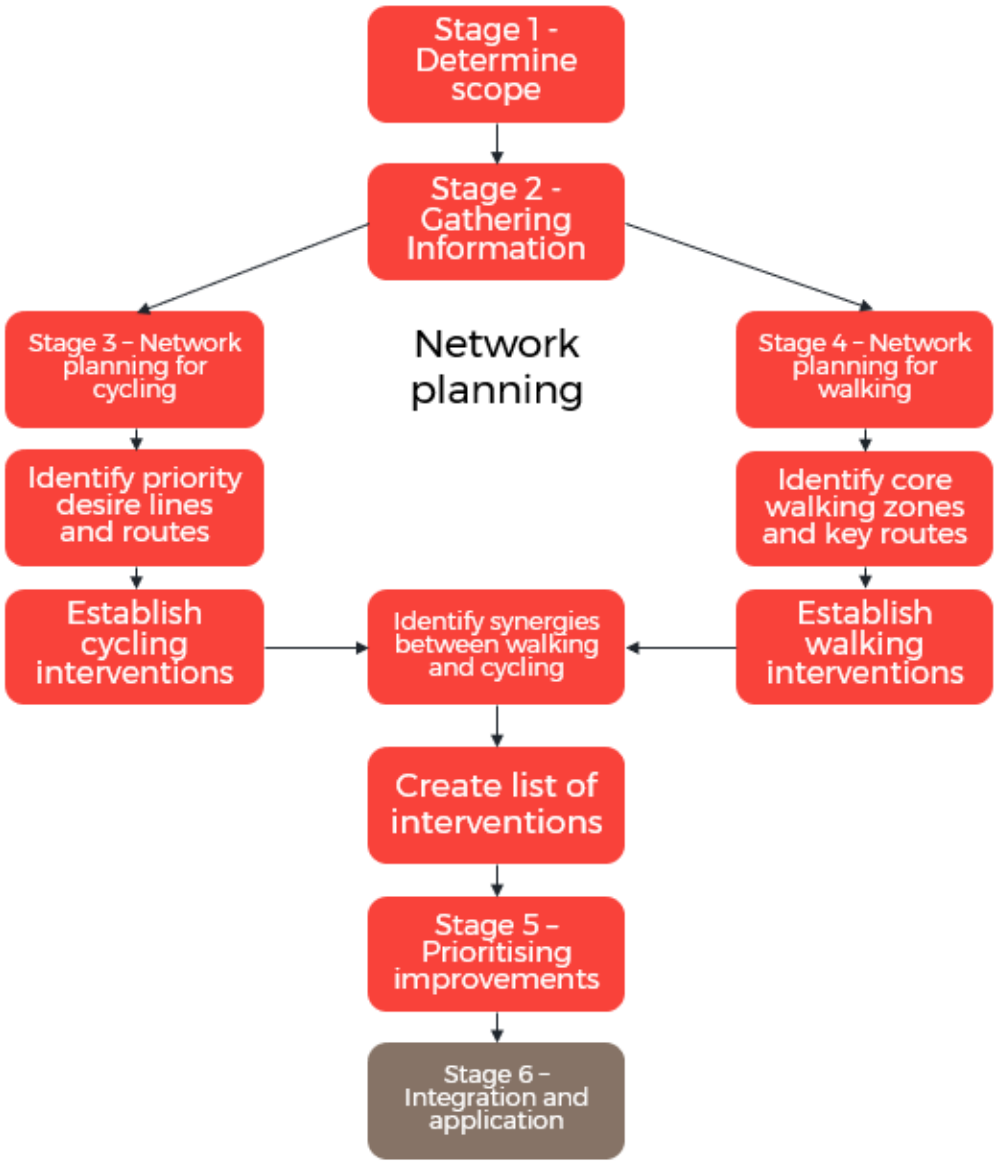


Figure 1-1 above shows a flowchart of the 6 stages for the development of LCWIPs.

The first step is to determine the plan's scope, followed by stage 2, the gathering of information. Once the information has been gathered, the flowchart splits into two parallel processes, these being stage 3, network planning for cycling and stage 4, network planning for walking.

For cycling, identify priority desire lines and routes and, from that establish cycling interventions.

For walking, identify core walking zones and key routes and, from that establish walking interventions.

The flowchart then brings the two parallel processes back together as a single pathway. Synergies between walking and cycling are identified and a list oof interventions is then created.

Stage 5 is then to prioritise the identified improvements. Finally, stage 6 is shown as being that of integration and application. The box containing stage 6 is shaded grey, whereas all the previous boxes in the flowchart are shaded red.

That completes the flowchart.

WSP have supported the Kettering LCWIP Stages 1 to 5; with Brightwayz assisting with public consultation and engagement. Based on DfT guidance, Stage 6 is a non-technical stage which concerns the integration of the LCWIP into local policy, strategies and plans. As such, Stage 6 will be advanced by NNC.

1.2 Report Structure

The remainder of the report will be structured around Stages 1 to 5 of the LCWIP, consisting of:

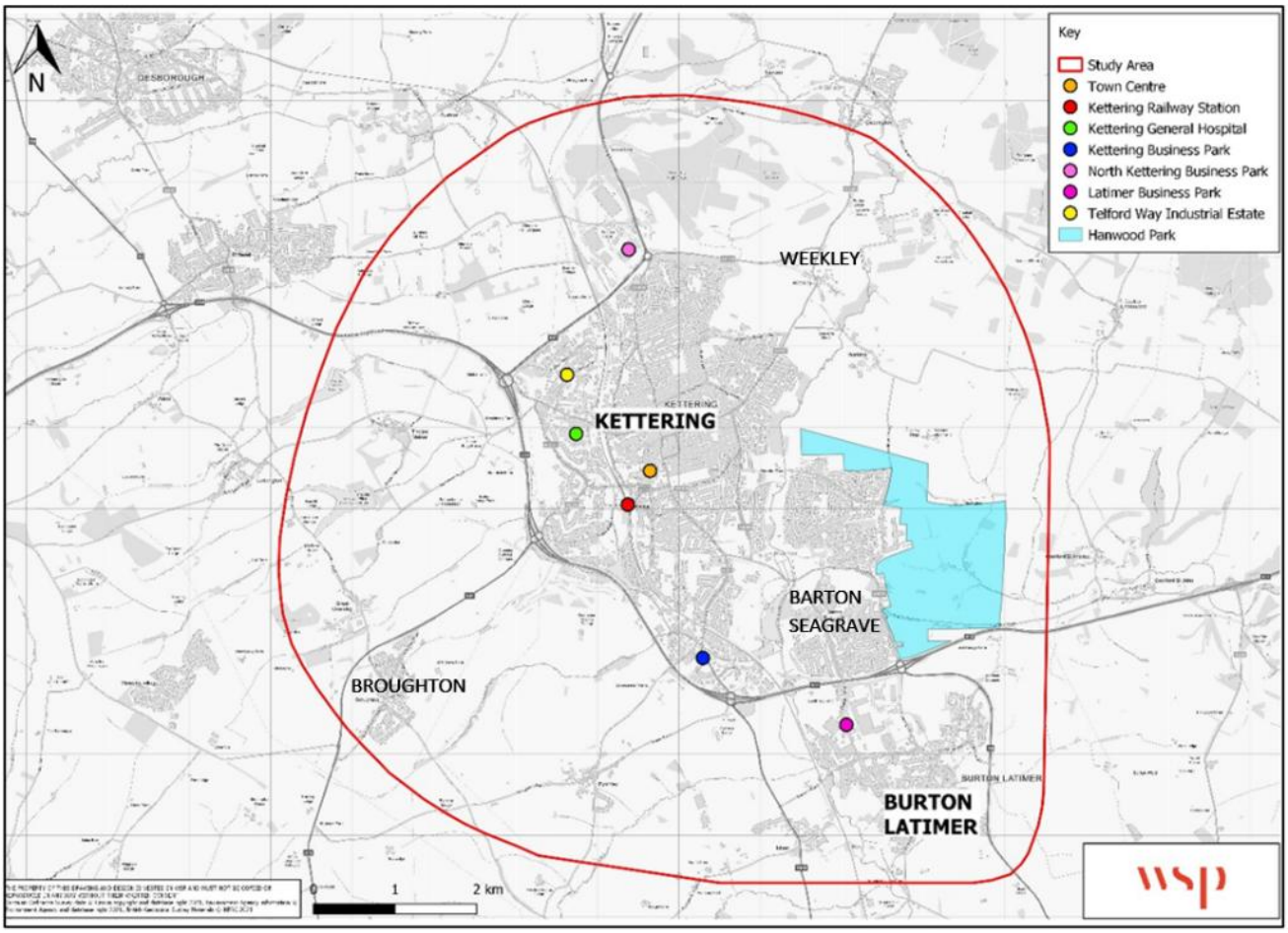
- Section 2: Determining Scope (LCWIP Stage 1);
- Section 3: Information Gathering (LCWIP Stage 2);
- Section 4: Network Planning for Cycling (LCWIP Stage 3);
- Section 5: Network Planning for Walking (LCWIP Stage 4); and
- Section 6: Prioritising Improvements (LCWIP Stage 5).

2.0 Determining Scope

A digital inception meeting was held in July 2021 to set out the geographical extent of the LCWIP; full scope of the project; governance arrangements; and timescales. Representatives from NNC, WSP and Brightwayz attended the meeting.

Figure 2-1 presents the LCWIP study area boundary, along with key trip generators that were identified at the inception stage.

Figure 2-1 – Kettering LCWIP study area



The geographic extent of the Kettering LCWIP covers the existing urban area of Kettering, as well as Barton Seagrave, Broughton and Weekley. Also included within the study area is Burton Latimer to the southeast of Kettering, which is located just outside the 5km buffer but was viewed as having potential for cycle movements.

The study area boundary does not form a ‘hard’ boundary, with origins and destinations just outside of the boundary remaining in consideration should the network development analysis indicate potential for cycle or walking trips. However, the greatest potential for increasing cycling and walking is likely to be within the main urban area where trip origins and destinations are in proximity and where population densities are highest.

The delivery model for the LCWIP project was also established, with NNC acting as the leading local authority for the LCWIP project due to Kettering being located within North Northamptonshire. Representatives from West Northamptonshire Council (WNC) were also involved throughout the project, providing additional expertise and local knowledge.

As part of the governance arrangements, WSP assumed a Project Management role, with NNC retaining overall responsibility for project governance. A Senior Responsible Owner and Project Board were

established. Effective engagement practices were also agreed within the inception meeting, establishing regular Project Board meetings and arrangements for stakeholder workshops.

3.0 Stage 2: Information Gathering

3.1 Introduction

The LCWIP has been developed using a variety of key datasets to establish the existing and future travel patterns in Kettering, as well as drawing on local policies and plans to inform the priorities for improvement in the town. This section provides an overview of the data that has been reviewed and used within this report.

3.2 Policy Context

The current active travel policy position across the study area has been reviewed against other regional and national policy, to ensure that the Kettering LCWIP aligns with national, regional, and local policy. The following list provides a summary of the policy and strategy documents reviewed and their relevance to the development of this LCWIP:

National policy

- **Cycling and Walking Investment Strategy (DfT, 2017)** – Sets out the Government's ambition to make walking and cycling the natural choices for shorter journeys or as part of longer journeys, as well as outlining targets to double cycling trips between the years 2013 and 2025.
- **Gear Change: A Bold Vision for Cycling and Walking (DfT, 2020)** – Government's vision to see a step-change in levels of walking and cycling in England, through £2 billion set aside for investment; the creation of a new body named Active Travel England; and outlining key design principles.
- **Local Cycling and Walking Infrastructure Plans (LCWIP) Guidance (DfT, 2017)** – The LCWIP guidance sets out a recommended approach to planning networks of walking and cycling routes; the Kettering LCWIP has been developed using this guidance.
- **LTN 1/20: Cycle Infrastructure Design (DfT, 2020)** – LTN 1/20 sets out the guidance for cycling infrastructure; the Government intends that all proposed schemes will be checked against the summary principles, which are built on five core design principles.
- **The Highway Code (DfT, 2022)** – The Highway Code was updated in January 2022 and reinforces the hierarchy of road users which places pedestrians and cyclists at the top of the hierarchy as they are road users most at risk in the event of a collision.
- **Future of Mobility: Urban Strategy (DfT, 2019)** – Outlines that benefits of innovation can help enable active travel to remain the best option for short urban journeys.
- **Decarbonising Transport (DfT, 2021)** – Sets out the Government's commitments and the actions needed to decarbonise the entire transport system in the UK to reduce transport emissions to net zero by 2050.
- **The Ten Point Plan for a Green Industrial Revolution (DfT, 2020)** – Seeks to increase the share of journeys taken by public transport, cycling and walking using £5 billion for buses, cycling and walking as announced earlier in 2020.

Regional policy

- **England's Economic Heartland: Regional Transport Strategy (EEH, 2021)** – Aims to enable growth and achieve goals to net zero by 2040, as well as one of four key principles seeking to improve quality of life through sustainable and active travel.

Local policy

- **Northamptonshire Local Transport Plan (NCC, 2012)** – Sets out the strategic aims and goals for the future of transport in Northamptonshire.
- **Northamptonshire Cycling Strategy (NCC, 2013)** – Is a daughter document to the Local Transport Plan and sets out the vision to making cycling more attractive for shorter journeys, as well as for leisure purposes.
- **Kettering Town Transport Strategy (NCC, 2015)** – Aims to deliver a transport network which supports plan for population and economic growth through identification of interventions including sustainable measures to improve active travel.
- **North Northamptonshire Joint Core Strategy 2011–2031 (NNJPU, 2016)** – Strategic Part 1 Local Plan which outlines various desired outcomes including more walkable places and an excellent choice of ways to travel.
- **Kettering Borough Council Cycling Strategy and Masterplan (KBC, 2005)** – Seeks to turn the interest in cycling into increased use by overcoming the real and perceived barriers to cycling.

The key design principles set out in Gear Change and core design principles outlined in LTN 1/20 have been considered throughout the development of this LCWIP and associated interventions. The Kettering LCWIP has also been developed following the guidance set out in the 2017 DfT LCWIP Guidance.

Key design principles from Gear Change outline that: cyclists must be separated from volume traffic and pedestrians; cyclists be treated as vehicles; routes must join together; routes must feel direct; routes must take account of how users actually behave; purely cosmetic alterations and barriers should be avoided; and routes should be designed only by those who have experienced the route on a bicycle.

Core design principles set out in the LTN 1/20 represent the essential requirements to achieve more people travelling by foot and bicycle. These five principles are for networks to be coherent, direct, safe, comfortable and attractive.

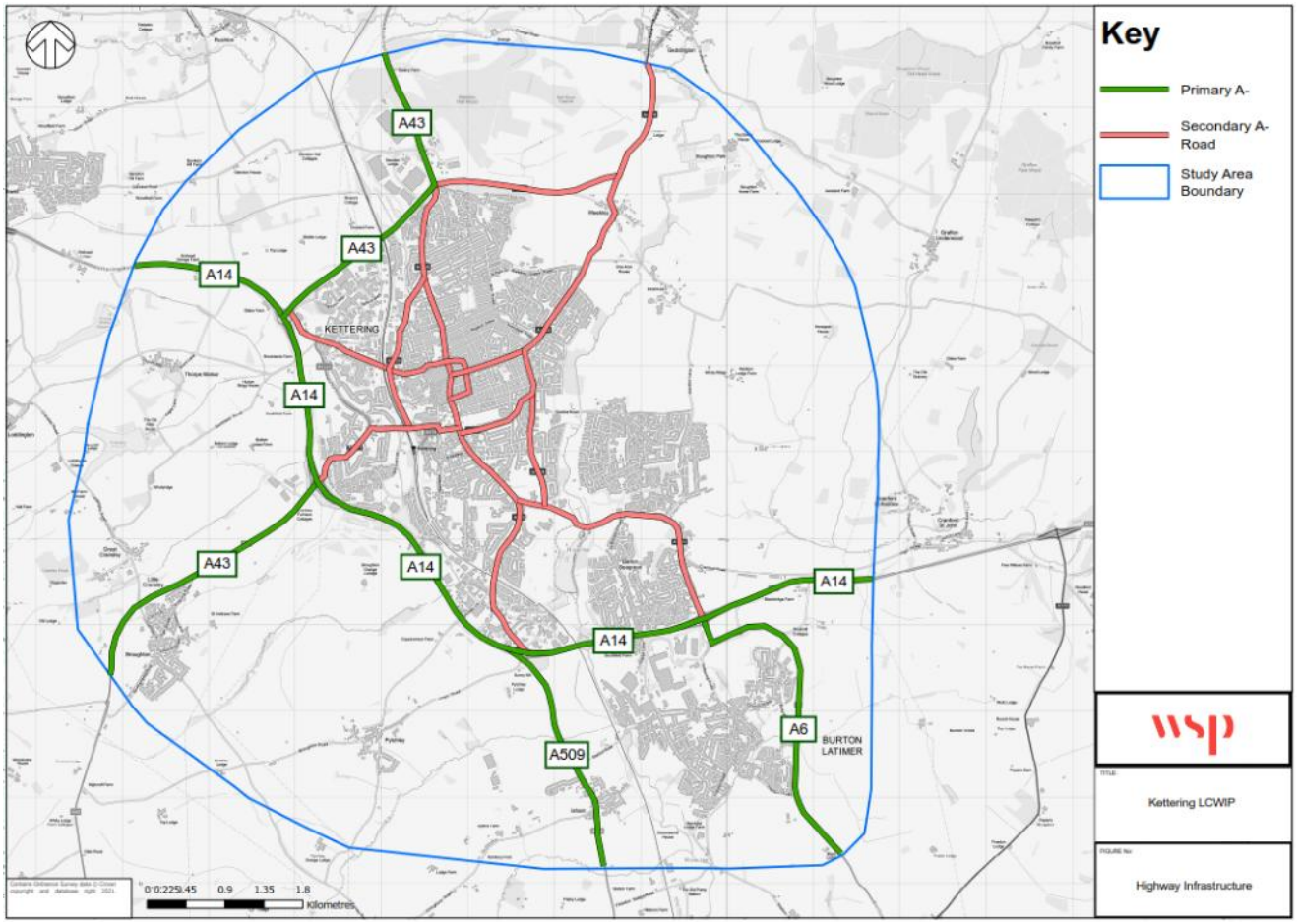
Further information on the above policy documents is set out in **Appendix A**, which contains the Kettering LCWIP Policy Note.

3.3 Transport Network

Highway network

Figure 3-1 represents the local highway network within the Kettering study area.

Figure 3-1 – Local highway network



Kettering is a key node in the UK highway network, with the primary A road network within the study area comprising the A14, A43, A509 and A6.

The A14 crosses the study area from northwest to southeast and forms the town's western and southern boundaries. The A14 is a primary freight artery between the east coast ports and the midlands; and also forms a key link to the M1 and the wider Strategic Road Network. The A14 also interchanges with the A43 west of the town, which provides further links north to Corby and south to Northampton.

Two further strategic corridors interchange with the A14 to the south of Kettering, the A509 and the A6. At a regional level, the A509 links to Wellingborough, Rushden and Milton Keynes; and the A6 links to Rushden and Bedford.

Cycle and pedestrian network

The cycle and pedestrian network in Kettering is mapped in Figure 3-2. This shows the location of on road signed cycle routes, shared use walking/cycling routes, footpaths and toucan crossings.

Figure 3-2 – Cycle and pedestrian network

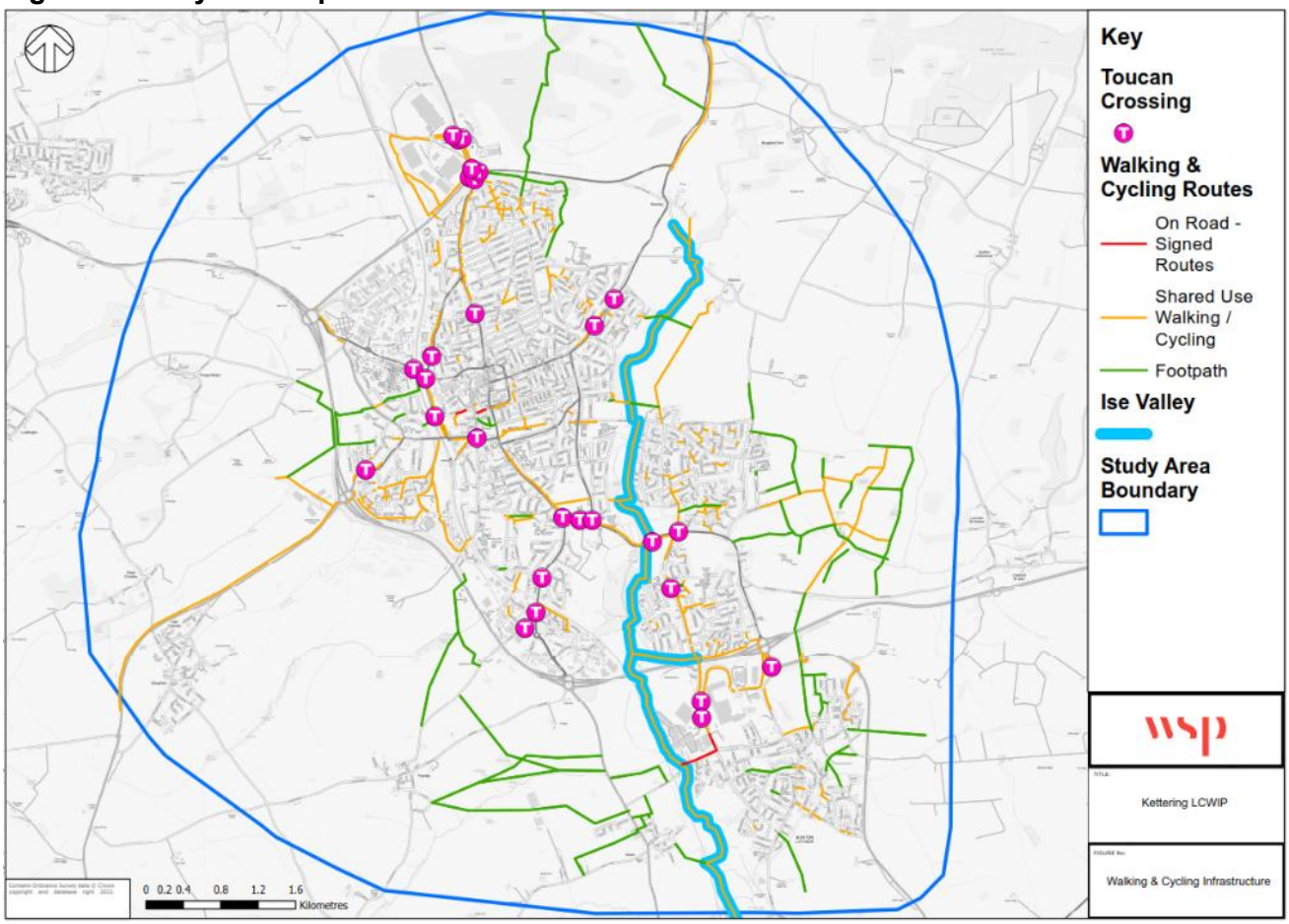


Figure 3-2 shows the existing cycle network within the study area, identified from the 2018 Kettering Town Cycle Map produced by the former Northamptonshire County Council (now split into North Northamptonshire Council and West Northamptonshire Council).

Figure 3-2 also presents the cycling and pedestrian infrastructure to be delivered as part of the Kettering East Sustainable Urban Extension (also known as Hanwood Park). The figure also includes the proposed Ise Valley corridor, which comprises north-south linkages through eastern Kettering, parallel to the River Ise. The proposed Ise Valley shared use walking/cycling routes will provide north-south linkages through the east side of Kettering and into Barton Seagrave and Burton Latimer (locations shown in Figure 2-1). There are also shared use walking/cycling routes in the north and west of Kettering, however these routes have limited connectivity.

Figure 3-2 does demonstrate that there are significant gaps in walking and cycling routes; particularly in central, south west, north west and north east Kettering.

Barriers to movement

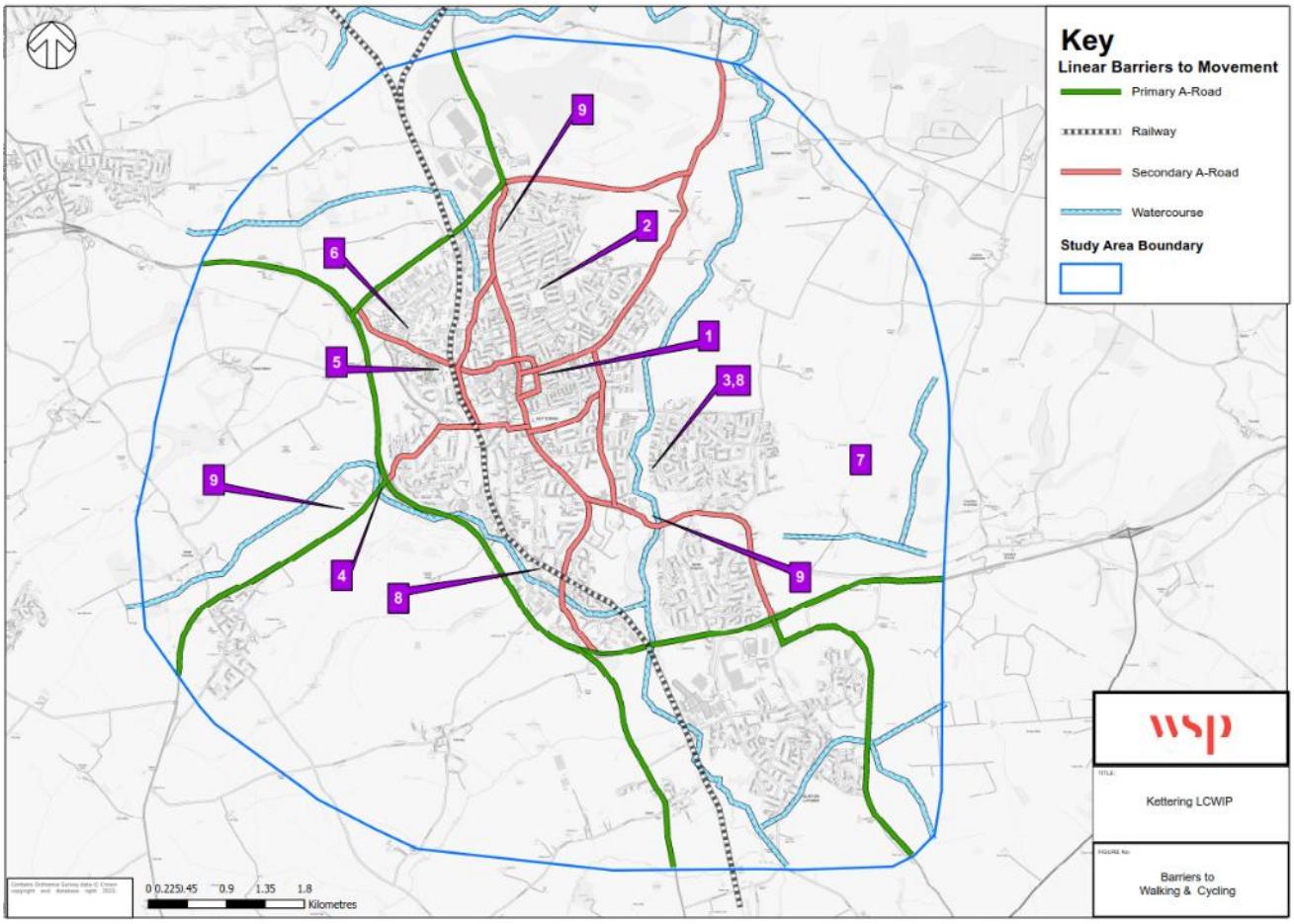
It is evident that there is a reasonable core of walking and cycling routes existing in Kettering, which could facilitate mode shift to increase the number of trips by walking or cycling. However, some barriers to movement have been identified and are detailed below:

1. Although the town centre has pedestrianised zones, particularly centred around shopping, there are significant gaps in cycling and walking corridors connecting into the town centre, resulting in limited penetration to/from the town centre.
2. Lack of cycling and walking routes in the north, northeast and northwest of Kettering which reduce the connectivity and permeability of these areas.

3. The proposed improvements along the Ise Valley corridor provide a good north-south corridor, however they do not mitigate the barrier to east-west movements formed by the river.
4. The Broughton Interchange shared walking/cycling route isn't protected by traffic signals. Considering the high volume and speed of traffic through this junction, this presents a safety concern for those crossing the A14 entry and exit slips and could deter people from walking or cycling in this location.
5. Rothwell Road is located in the northwest of Kettering, providing a vehicle route from the A14 into Kettering town centre and providing access to Kettering General Hospital and Telford Way Industrial Estate, both of which are major trip generators. The route is a single carriageway road, with no cycling facilities provided. This would require cyclists to cycle on road and could be a barrier to people cycling to the trip generators on this route.
6. There are a lack of cycle links into the Telford Way industrial estate and the railway line extends along the eastern boundary of the site, which could create barriers to people cycling and walking to the industrial estate which is a major employment area. Considering the number of HGV movements associated with a site like this and the lack of formal infrastructure, this could result in safety concerns of cyclists. There is also a similar challenge regarding a lack of connections into the Kettering Business Park and neighbouring Orion Park estate, where the shared walking/cycle lane ends at the entry junctions to the sites.
7. Lack of connectivity between the proposed cycling infrastructure relating to the Hanwood Park development and the existing core network. Burton Latimer and Hanwood Park are only connected by a footpath under current designations and proposals.
8. Limited surveillance along some of the routes, such as the underpass between Highfield Road and Kettering Business Park, might raise safety concerns for vulnerable users.
9. Conflict between users, particularly cyclists, throughout Kettering may limit the potential uptake of cycling in the long term.

Figure 3-3 visualises the nine infrastructure gaps listed above, as well as physical barriers to movement including the railway and watercourses.

Figure 3-3 – Barriers to movement



In addition to the nine specific infrastructure gaps, there are also further physical barriers to movement in relation to A roads, watercourses and the railway.

Due to the large volume of vehicles travelling at high speeds and limited crossing points, the Primary A-Roads to the west and south of the town would present a very unattractive and unsafe environment for cyclists; reducing the potential use of walking and cycling as modes to access the rural areas or neighbouring towns to the west and south of Kettering.

The Midland Mainline passes through the town on a North-South axis. To the north of Kettering station, the line is raised on an embankment with pedestrian/cycle permeability limited to Rothwell Road and a walking/cycling underpass between Meadow Road & Bowhill and the A6013. This means that, despite the close proximity of the Telford Way Industrial Estate and the northern residential dwellings, there is no sustainable mode permeability without considerable diversion.

South of Kettering station, the line is generally grade separated. There is slightly more permeability on this section, though the quality is mixed. There is a pedestrian only overbridge off Ostlers Way, close to Bishop Stopford school; and an underpass between Highfield Road and Kettering Business Park. However, the underpass has a lack of surveillance, potentially acting as a deterrent to vulnerable users. As such, consideration should be given to improving the existing walking/cycling links across the railway and/or provide additional links.

In regard to watercourses, Slade Brook runs roughly parallel to the A14 and the River Ise runs north-south through the town; these form considerable barriers to the Kettering Business Park and Barton Seagrave respectively.

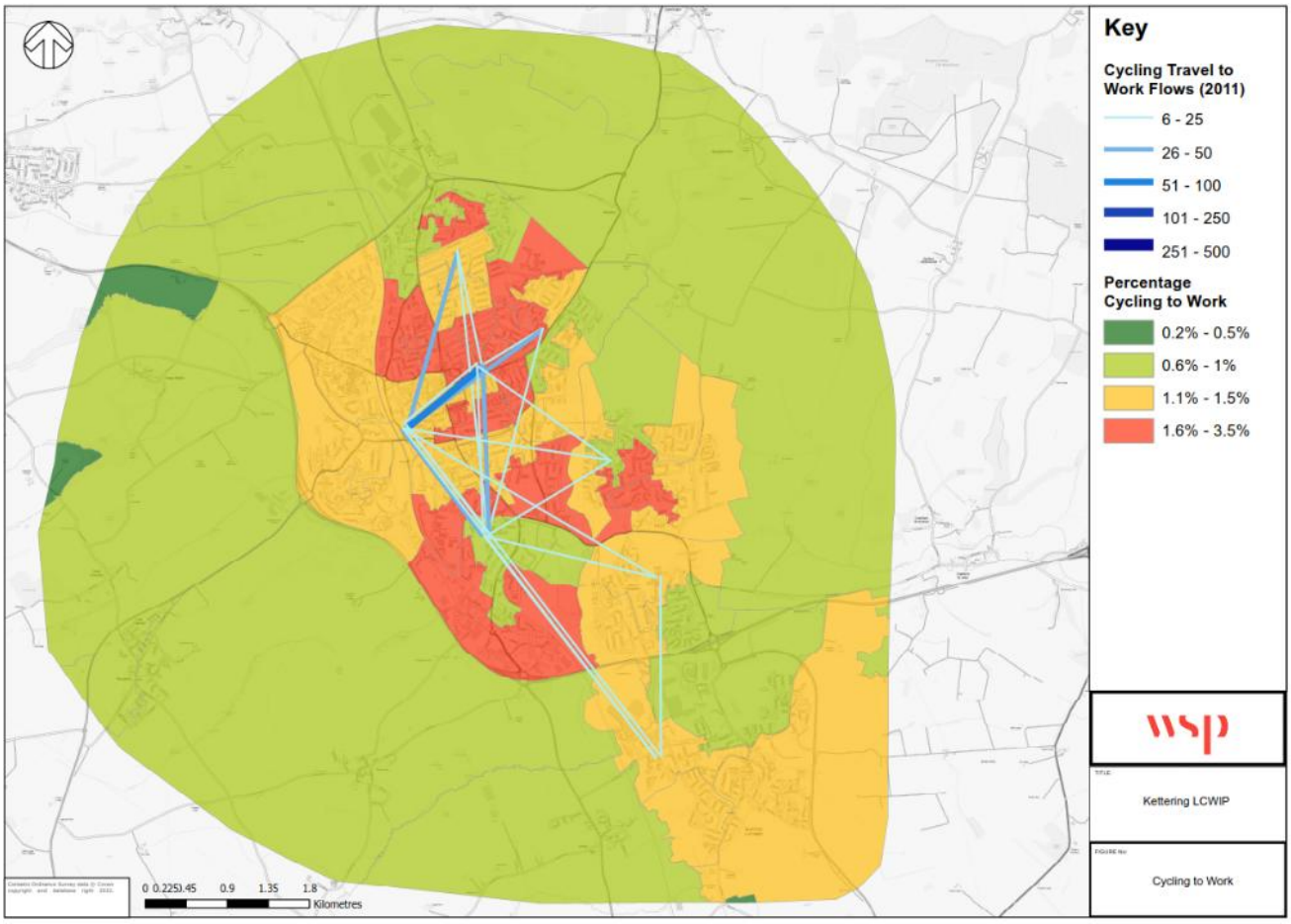
3.4 Travel Patterns

Existing Cycling mode share

Figure 3-4 shows the percentage of travel to work trips made by bicycle and travel to work flows based on data from the 2011 Census. For context, regional and national cycle mode share taken from the 2011 census is shown below:

- UK Cycle Mode Share: 1.9%;
- Northamptonshire Cycle Mode Share: 1.3%; and
- Kettering Cycle Mode Share: 1.2%.

Figure 3-4 - Existing cycle mode share and cycling flows



Figure

As shown in Figure 3.4, the level of cycle usage for travel to work purposes varies across the study area. Areas to the north, south and centre of Kettering's urban area have above-average levels of cycling (1.6% - 3.5%), with the majority of the urban area being in line with the town average and county average, though below the UK average.

The rural area outside of Kettering has lower mode share, reflecting the lack of longer distance cycle routes to and from the town.

Existing Walking mode share

Figure 3-5 shows the percentage of travel to work trips made on foot and travel to work flows based on data from the 2011 Census. For context, regional and national walking mode share taken form the 2011 census is shown below:

- UK Walking Mode Share: 6.3%;
- Northamptonshire Walking Mode Share: 6.1%;
- Kettering Walking Mode Share: 7.2%.

Figure 3-5 - Existing walking mode share and walking flows

As can be observed, the walking mode share in the town is varied. The town centre and north west of the town shows a high percentage of walking (16% - 20%). In addition, parts of the north east and south of the town also have a percentage of walking to work of between 11% and 15%. The walking mode share in these areas is significantly higher than the national and county walking mode shares.

Barton Seagrave in the southeast of Kettering and the eastern edge of Kettering have very low levels of walking mode share, likely reflecting its distance from any employment sites and barriers to movement as detailed in the previous section. In addition, the rural area around the town has a very low walking mode share, most likely due to a lack of walking infrastructure and the long distances to employment, retail and leisure facilities.

Existing Travel to school Cycling and Walking Mode Share

Table 3-1 presents existing cycling and walking mode share data for primary and secondary schools in the study area. The table shows that the majority of schools have 0% cycle mode share, with Latimer Arts College having the highest cycle mode share (7.3%). 21 schools have above 50% walking mode share and 2 schools have 0% walking mode share. The highest mode share for walking is 92.2%, which is extremely high.

Table 3-1 – Cycle and walking mode share for travel to school

School	Type	Total pupils	Cycle mode share	Walking mode share
Southfield School for Girls	Secondary	1,028	1.50%	27.50%
Kettering Bishop Stopford	Secondary	1,417	2.30%	13.50%
Montsaye Community College	Secondary	1,174	n/a*	34.70%
The Latimer Arts College	Secondary	1,150	7.30%	37.20%
Havelock Junior School	Primary	284	0.00%	69.00%
Havelock Infant School	Primary	262	0.00%	62.20%
Kettering Park Junior	Primary	359	0.00%	76.90%
St Andrews CE Primary	Primary	265	0.00%	62.30%
Pytchley Endowed CE Primary	Primary	83	0.00%	34.90%
St Edward's Catholic Primary	Primary	209	0.00%	39.20%
Loatlands Primary School	Primary	285	0.00%	62.10%
Braybrook Primary School	Primary	36	0.00%	0.00%
Rushton Primary	Primary	91	0.00%	18.70%
Geddington C of E Primary	Primary	190	0.00%	60.50%
Wilbarston C of E Primary School	Primary	120	0.00%	32.50%
Hawthorn Community Primary School	Primary	312	1.90%	74.70%
Greenfields Community Primary	Primary	119	0.00%	86.60%
Rothwell Victoria Infant School	Primary	329	0.00%	83.30%
Brambleside Primary School	Primary	311	0.00%	67.20%
St Mary's CEVA Primary School	Primary	249	0.00%	80.30%
Hall Meadow Primary School	Primary	211	0.00%	82.00%
Mawsley CP School	Primary	305	0.00%	85.20%
Barton Seagrave County Primary	Primary	414	0.00%	51.90%
Cranford C of E Primary School	Primary	85	0.00%	0.00%
Millbrook Junior School	Primary	464	0.00%	51.10%
St Thomas More Catholic Primary	Primary	217	0.00%	23.50%
Rothwell Junior School	Primary	321	0.00%	62.60%
Broughton Primary	Primary	199	0.00%	69.80%
Park Infant School	Primary	264	0.00%	82.60%
Loddington CEVA Primary School	Primary	65	0.00%	23.10%
Millbrook Infant School	Primary	354	0.00%	37.90%
Kettering Grange Community	Primary	218	0.00%	92.20%
Meadowside Primary School	Primary	382	0.00%	73.60%
St Mary's C of E Burton Latimer	Primary	187	0.00%	72.20%

Source: Propensity to Cycle Tool
* = data not available

3.5 Propensity to Cycle Tool

To support LAs across England in the development of LCWIPs, the DfT commissioned the development of the Propensity to Cycle Tool (PCT)1. The PCT has been designed to assist transport planners and policy makers in prioritising investments and interventions to facilitate cycling. The PCT answers the question: 'where is cycling currently common and where does cycling have the greatest potential to grow?'. The PCT can be used to identify existing cycle demand and where potential future demand could occur.

[1] https://www.pct.bike/

The PCT comprises two datasets, one is based on travel to work journeys taken from the 2011 Census and the other data set is based on travel to school journeys taken from the 2011 National Schools Census. For this LCWIP assessment, 2011 Census travel to work data has been used.

The PCT can be applied in two ways during the development of an LCWIP. First, the PCT can be used strategically to show the rate of cycling across an area, such as a LA area or a study area. Second, the PCT can also be used at a smaller scale by estimating the number of cycle users on a particular link in the highway network.

The PCT includes several scenarios for estimating cycle demand, they include:

- The baseline 'Census 2011' scenario is based on the journey to work patterns of cycle commuters recorded in the 2011 census. The dataset is a record of the location of origin (residence) and destination (workplace) and the associated number of cycle commuters. The PCT generates desire lines from this dataset based on the origin-destination pairs and the user can select the desire lines with the highest demand.
- The 'Government Target' scenario is based on cycle flows if UK Government targets to double cycling by 2025 were met, whereby cycle flows from the Census 2011 are uplifted. There are two Government Target scenarios, these being 'Near Market' and 'Equality'. Both sub-scenarios were tested and demonstrated similar results; as such, only the Government Target Near Market scenario is presented in the analysis below.
- Another scenario, the 'Go Dutch' scenario, considers what would happen if people were as likely to cycle as the Dutch and had the same infrastructure as the Netherlands, but it adjusts the estimations to account for hilliness and trip distance. On average, people in the Netherlands make 26.7% of trips by bicycle, fifteen times higher than the figure of 1.7% in England and Wales. The 'Go Dutch' scenario highlights areas where cycling could be the natural choice for journeys, if suitable cycle infrastructure was in place and a cycling culture resembling that in The Netherlands were present. This is likely to highlight new priorities once accounting for the potential untapped demand for cycling.

The origins and destinations are grouped by Lower Super Output Area (LSOA) from the Census. This level of disaggregation provides a robust understanding of overall cycle commuting patterns for the study area.

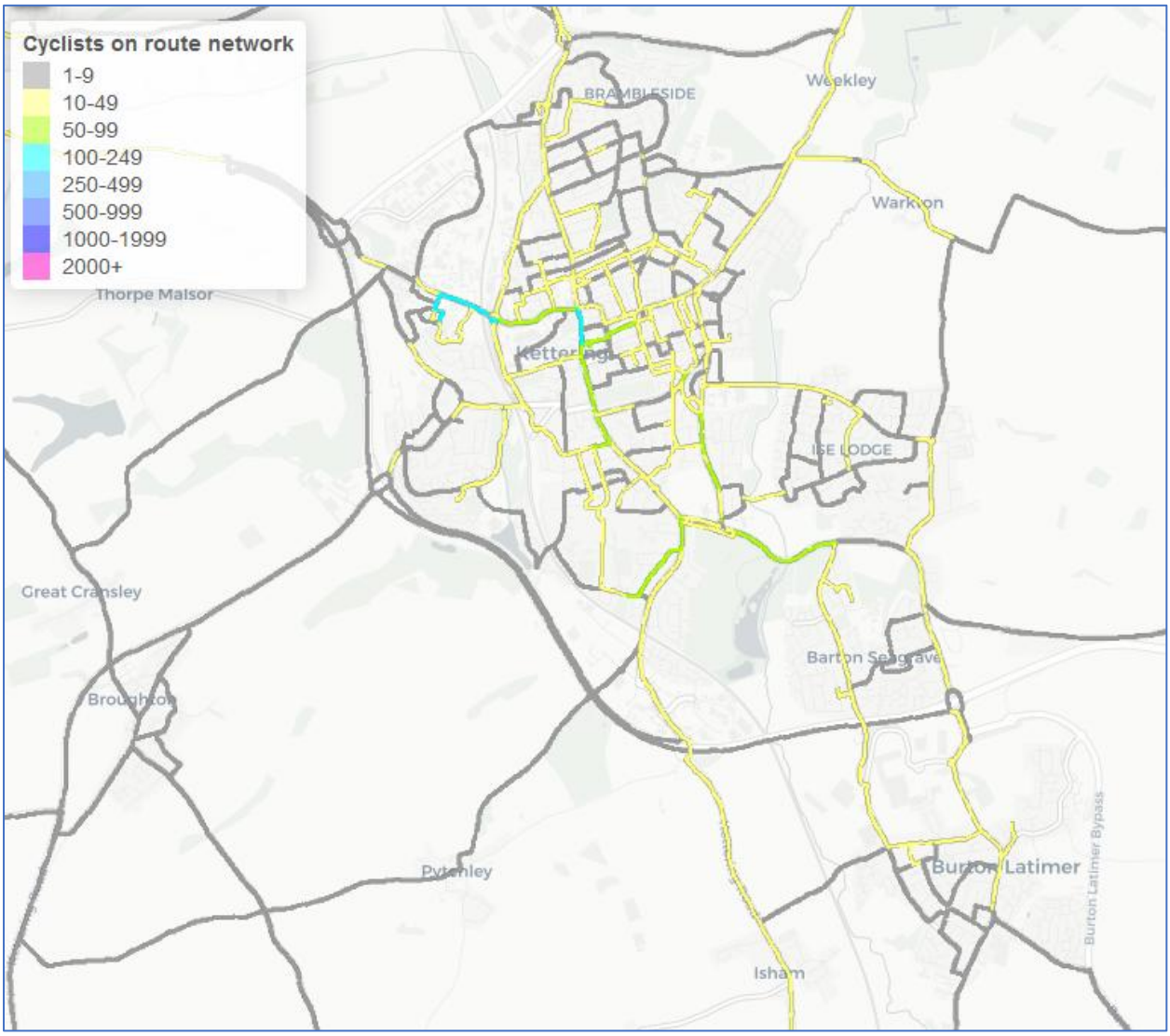
Whilst the PCT can identify existing cycle movements and where potential future demand could occur, it is based only on travel to work journeys and does not include other trip types such as to schools or leisure facilities. Another limitation is that it is based on existing land use and therefore does not account for future development sites or new sites since 2011. Additionally, it does not show cycle journeys that have their start and finish points within the same LSOA.

The following section discusses each of the PCT scenarios for the study area and analyses the outputs in relation to the Kettering LCWIP.

2011 Census scenario

Figure 3-6 presents the cycle trips assigned to the fastest legally cyclable routes based on existing 2011 Census data.

Figure 3-6 – Cycle flows (2011 Census scenario)



As can be seen in Figure 3-6, the PCT estimates that the vast majority of links have under 50 journeys to work undertaken by bicycle. The highest cycle flows are assigned to parts of Rothwell Road and Newland Street with many of these trips likely to be connecting to the Telford Way Industrial Estate, Kettering General Hospital or the town centre area.

It should be noted that cycling flows are automatically assigned to the road network using the PCT tool, based on the origins and destinations of those trips at LSOA level. Although this provides a useful model of how popular some routes may be, in reality the exact routes taken could be different due to highway conditions and traffic levels. In addition, the mapped routes use population weighted centroids rather than actual origins and destinations.

Government Target scenario cycle flows

Figure 3-7 presents the cycle flows if government targets to double cycling by 2025 were met. In this scenario, the cycle mode share identified in the 2011 baseline travel to work flows are uplifted in line with the following targets -

- Government Target (Equality): Equitability across age, sex and other socio-demographic groups.
- Government Target (Near Market): Cycle usage increases as a function of trip distance and hilliness, plus a number of socio-demographic and geographical characteristics.

Figure 3-7 – Cycle flows (Government Target Near Market scenario)

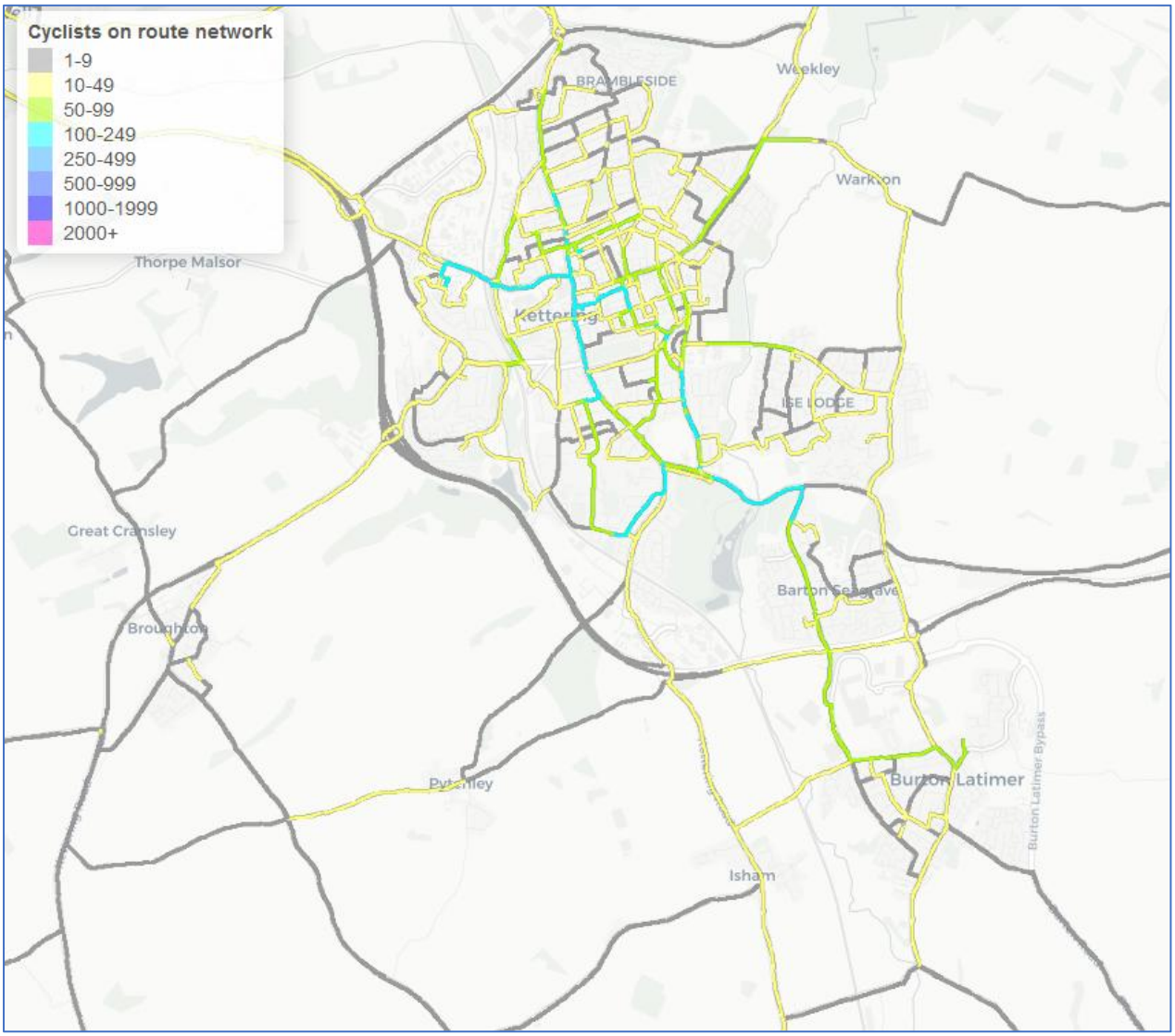


Figure 3-7 visualises the Near Market Government Target scenario, however it is to be noted that the Near Market and Equality Government scenarios had very similar outputs.

In both Government Target scenarios (Near Market and Equality), there is a general uplift across the study area whereby cycling flows increase across the network, with many arterial routes having over 100 cyclists. The primary movement axis is the A6003, with spurs towards the Telford Way and Kettering Business and Industrial parks.

Go Dutch scenario cycle flows

Figure 3-8 forecasts the most likely movement corridors under the ‘Go Dutch’ scenario.

Figure 3-8 – Cycle flows (Go Dutch scenario)

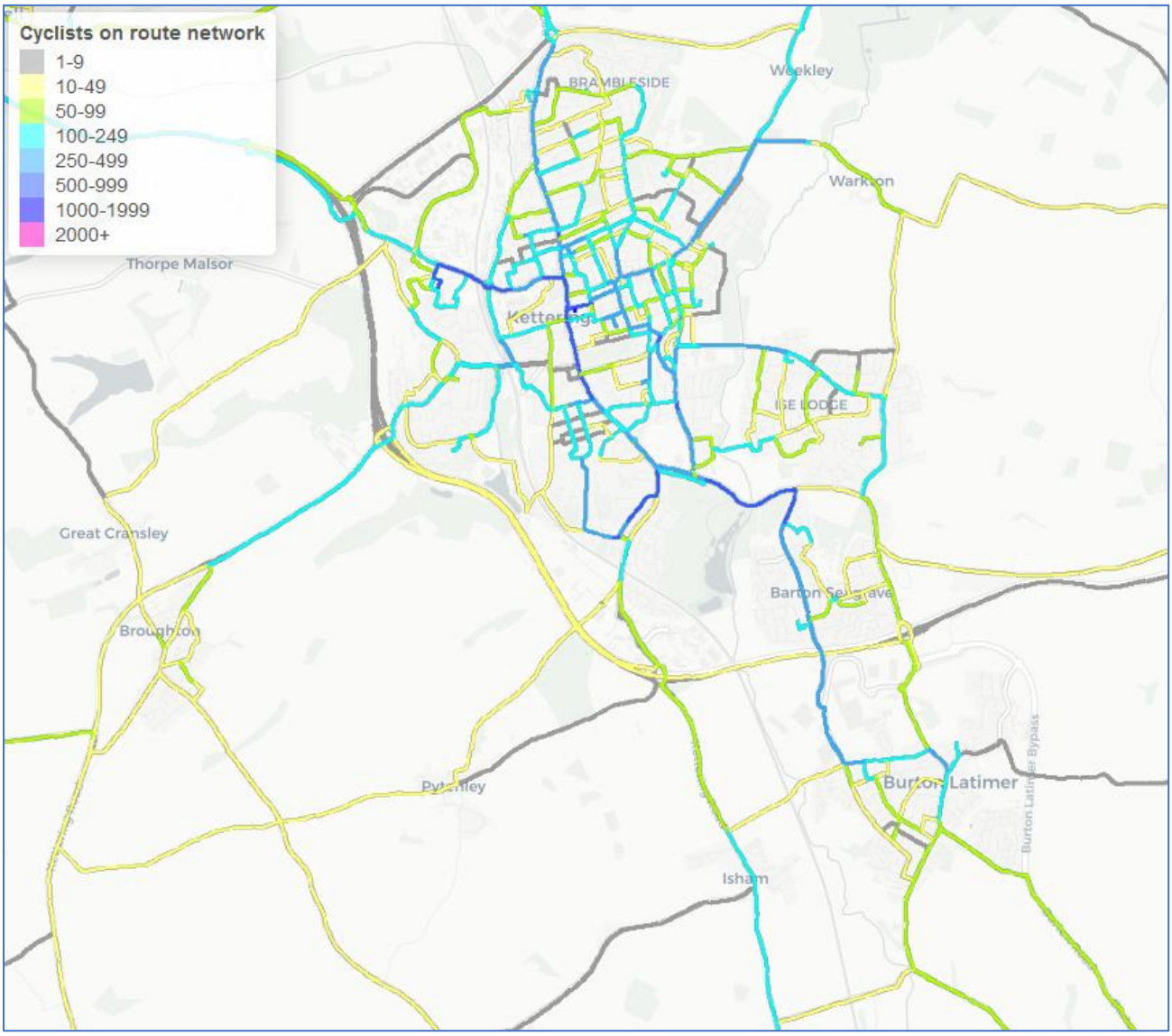


Figure 3-8 shows that under the 'Go Dutch' scenario, many routes have over 250 cyclists. The key flow remains the A6003 corridor northwest/southeast on through the town. However, under this scenario, cycle demand continues south towards Barton Seagrave and Burton Latimer, as well as north and northeast into the Grange. There is also potential cycle demand further out from the town, including trips to/from Pytchley and Broughton.

The movements identified here align well with the routes identified in the next chapter by the Walking & Cycling Desire Line Tool.

3.6 Rapid Cycleway Prioritisation Tool

The Rapid Cycleway Prioritisation Tool (RCPT) was developed by Sustrans and the Department for Transport to help to identify promising new cycleways in England, as well as showing an estimate of the number of cyclists using these routes if the government's aim to double cycling by 2025 is met.

The tool's main purpose was to help direct investment in emergency active travel solutions during the response to the Covid-19 pandemic. The three types of cycle routes it identifies are:

- Top ranked new cycleways: Those that have the highest cycling potential and also have spare space for cycle schemes. Spare space is defined by the available width or whether there are two or more traffic lanes in one direction;

- Cycleways that form part of a ‘cohesive network’: This includes narrower streets in addition to those which already have spare space. The tool connects all the identified roads to form a single network. This layer might also help to identify areas that could benefit from area wide measures, such as modal filters; and
- Existing cycleways: Where existing cycle infrastructure exists and gaps in the existing provision.

Figure 3-9 presents the output from the RCPT for the Kettering area, with two sections of highway being classified as top ranked new cycleways. These are along Rockingham Road and Barton Road. The section along Rockingham Road correlates with the outputs from the PCT, however, there is a less clear link between the PCT data and the section along Barton Road. However, it is important to acknowledge that the RCPT is looking at where there is spare space, as well as potential demand.

Figure 3-9 – Rapid Cycleway Prioritisation Tool

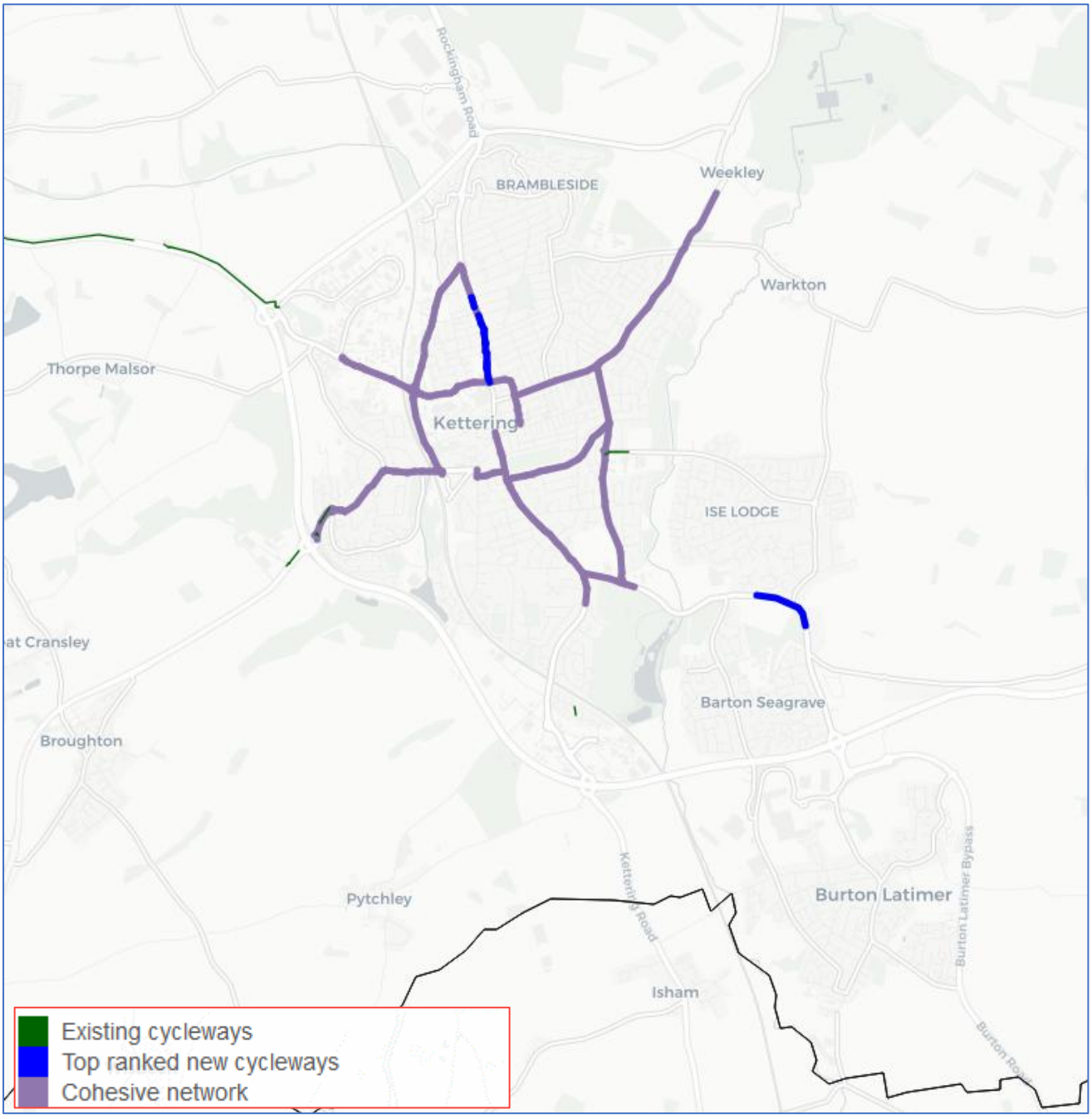


Figure 3-9 presents that the links that are categorised as cohesive network are predominantly in and around Kettering town centre along with radial routes. The tool recommends the consideration of

interventions to support cycle use through area wide measures (e.g. modal filters, quiet streets) along these links and the LCWIP will reference this during Stages 3 and 5.

These links identified align strongly with those identified in both the Propensity to Cycle Tool and the Walking & Cycling Desire Line Tool, showing a focus on north-south movements, supported by east-west routes.

3.7 Collision Analysis

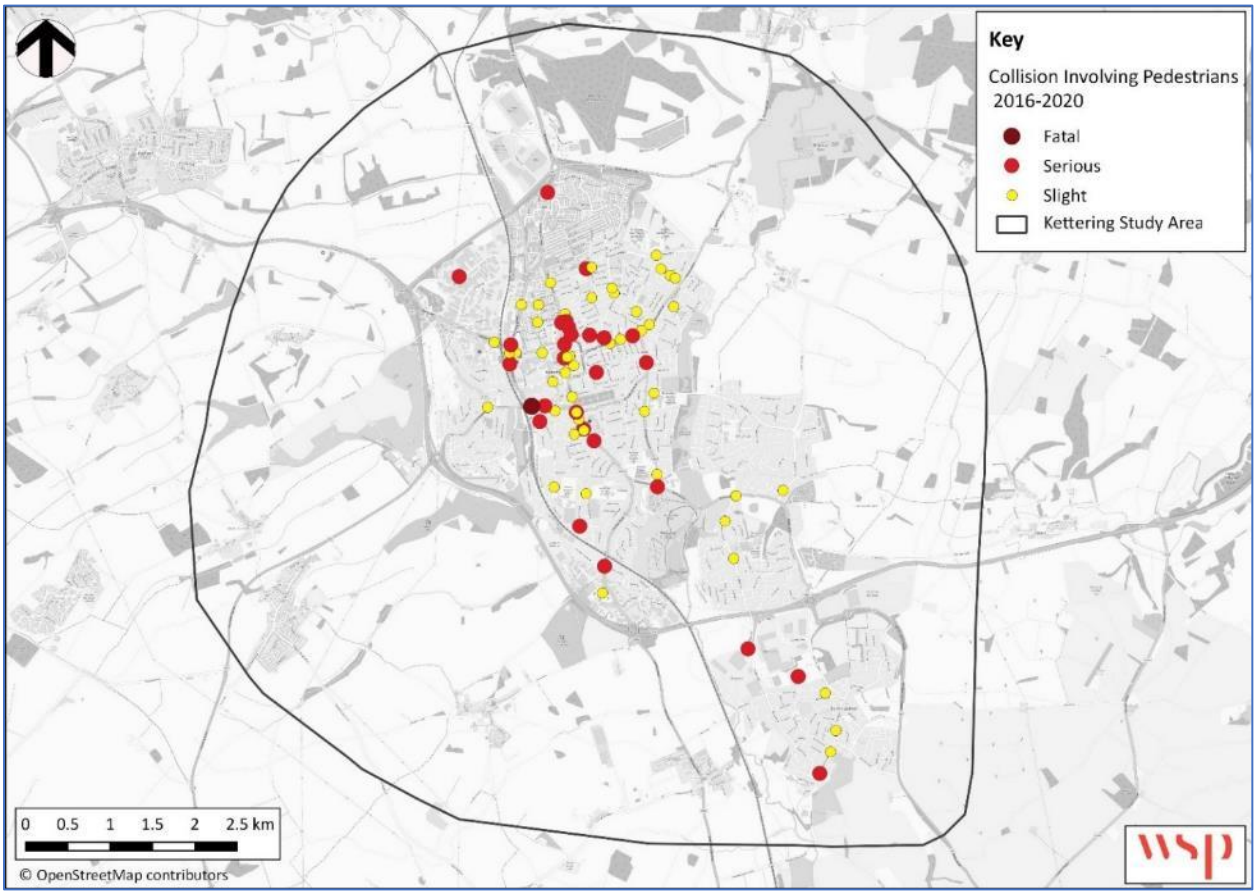
Pedestrian and cycle collision data was collected from Crashmap, which is an online tool that collates data gathered by local police forces and published by the DfT. The records relate only to personal injury accidents on public roads that are reported to the police, and subsequently recorded, using the STATS19 accident reporting form.

Information on damage-only accidents, with no human casualties or accidents on private roads or car parks are not included in this data2.

Collisions involving Pedestrians

Figure 3-10 presents the collisions involving pedestrians within the study area. Most of the collisions occurred within the urban area of Kettering. There was 1 fatal collision, 28 serious collisions and 53 slight collisions in total across the district between 2016 and 2020.

Figure 3-10 – Collisions involving pedestrians 2016–2020



There was one fatal collision at the junction of the A6013, the A6003 and Northfield Avenue. This junction is a primary access to the town from the west and also the primary approach route to the town's station.

[2] https://www.crashmap.co.uk/|

Some serious injury collisions took place across Kettering. The following serious collision clusters involving pedestrians were identified.

- The junction of the A6013, the A6003 and Northfield Avenue;
- Rockingham Road, with a cluster of serious injuries immediately north of the junction of the A4300 in the vicinity of the large Sainsbury's store;
- The Northfield Avenue/Lower Street/Rockingham Road roundabout, another of the town's major entry points and the access to the Telford Way Industrial Estate;
- The A509 to the south of the town centre;
- The A6003 Barton Road, near Wicksteed Park; and
- Kettering Road/High Street/Finedon Road in Burton Latimer.

These serious collision groupings and occurrences support the analysis of the town's primary and secondary A-roads being potential barriers to safe walking or cycling.

Slight collisions are more widely distributed across the network, with some clustering on the A-Roads near the same areas as the serious collisions, though a notable number also take place on the secondary roads.

Table 3-2 shows number of recorded collisions involving pedestrians over a five-year period from 2016 – 2020, for the study area.

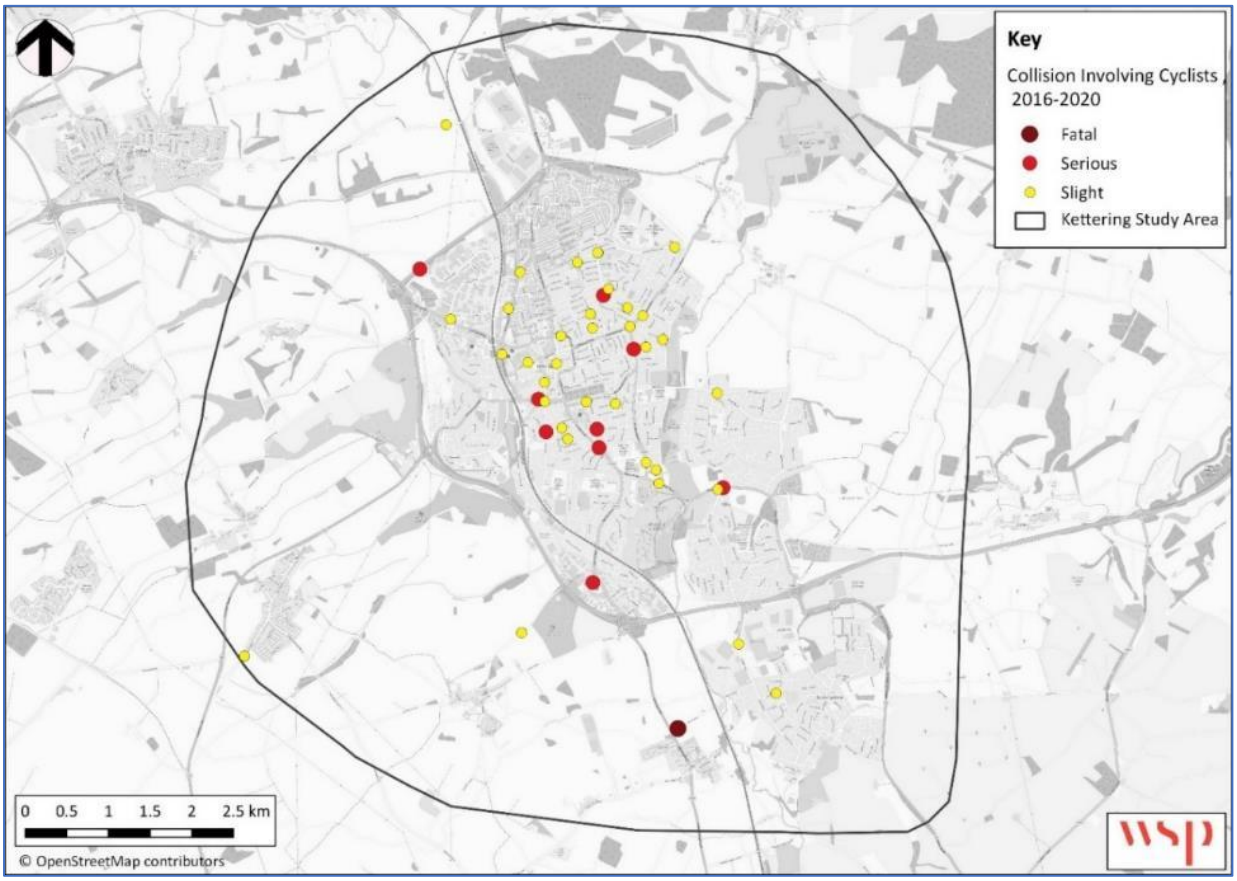
Table 3-2 – Collisions involving pedestrians 2016–2020

	2016	2017	2018	2019	2020	Total	Average
Fatal	0	0	0	1	0	1	<1
Serious	2	2	10	5	8	28	5
Slight	7	15	12	10	8	53	10
Total	**9**	**17**	**22**	**16**	**16**	**82**	**16**

Collisions involving cycle users

Figure 3-11 presents the collisions involving pedal cycles within the study area. Most collisions occurred within the centre of Kettering. There were 1 fatal collision, 10 serious collisions and 37 slight collisions in total across the district between 2016 and 2020.

Figure 3-11 – Collisions involving cycle users 2016–2020



There was one fatal collision north of the village of Isham, at the junction between the A509 and Station Road.

Serious collisions involving cycle users occurred in the following areas:

- A509 in the vicinity of Kettering Business Park;
- Barton Road near the junction with St Botolph's Road;
- A6003 in the vicinity of the Kettering Station;
- Between Kettering Station and the town centre;
- A43 North of Telford Industrial Estates; and
- Windmill Avenue north of A6900

Table 3-3 shows the number of recorded collisions involving pedal cycles within Kettering over a five-year period from 2016 - 2020.

Table 3-3 – Collisions involving cycle users 2016–2020

	2016	2017	2018	2019	2020	Total	Average
Fatal	0	0	0	1	0	1	<1
Serious	1	2	3	2	2	10	2
Slight	4	16	4	11	2	37	7
Total	**5**	**18**	**7**	**14**	**4**	**48**	**10**

3.8 Demographics

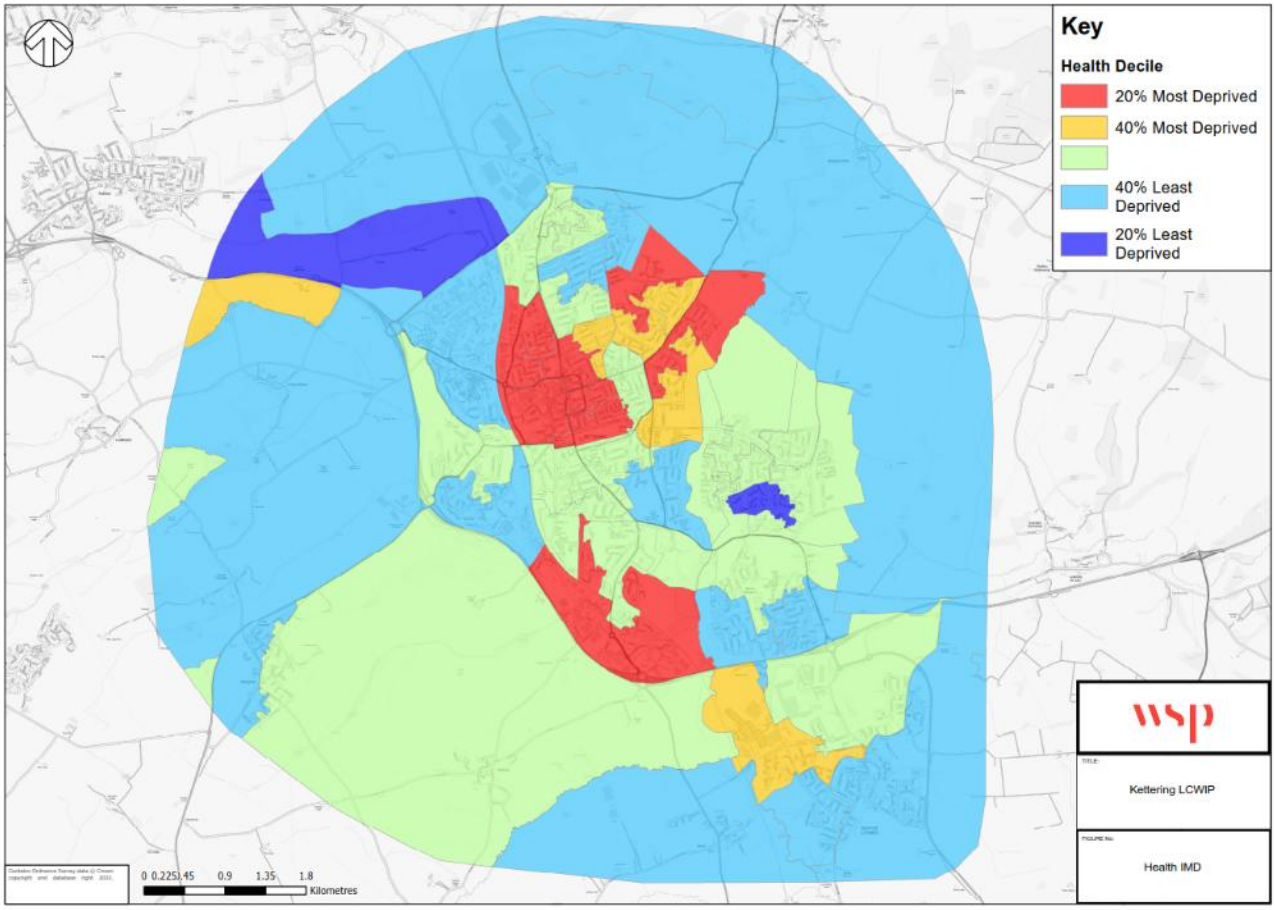
Indices of Multiple Deprivation

The Indices of Multiple Deprivation (IMD) 2019, provides a set of relative measures of deprivation for small geographical areas (Lower-layer Super Output Areas or LSOAs) across England, based on seven different domains of deprivation.

The IMD 2019 combines information from the seven domains to produce an overall relative measure of deprivation3. This acknowledges that, for example, low income alone might not be the defining factor for deprivation and enables consideration and identification of where several of the Indices of Deprivation are present.

Figure 3.12 shows the Indices of Multiple Deprivation present within Kettering, based upon their Deprivation Rank in relation to the wider UK.

Figure 3-12 – IMD Map



As can be observed in the preceding figure, there are several areas in Kettering's North, North East and South West which are among the 20% most deprived in the UK. Further locations in the north and south are in the 40% most deprived. Conversely, the rural area surrounding the town is generally in the 40% least deprived, whilst one area in the east of the town is in the 20% least deprived.

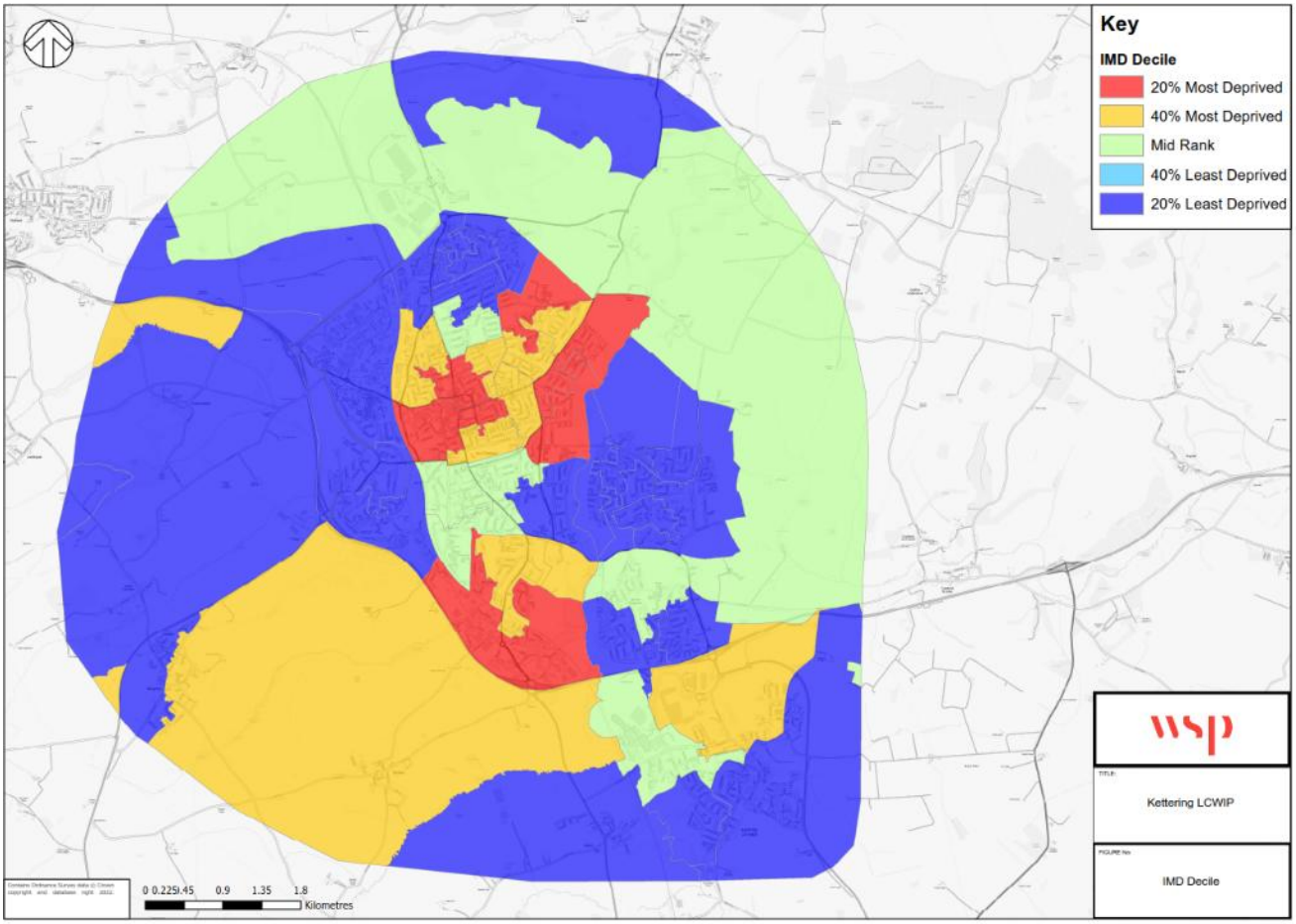
This mapping can support the targeting of walking and cycling interventions to help level up Kettering. By improving accessibility and urban realm through investment in active travel, access to education and skills can be raised for those without a car, activity levels can be increased (reducing the likelihood of crime) and people's health can benefit.

[3] Ministry of Housing, Deprivation, Communities & Local Government | The English Indices of Deprivation 2019 – *Technical Report*

Health Indices of Deprivation

Figure 3-13 below sets out the Health Indices of Deprivation (IoD) for Kettering.

Figure 3-13 – Health Index of Deprivation



As set out previously, the Health IoD is only one element of the overall IMD. However, it is apparent that the areas which perform poorly across the overall IMD are also those which perform worst for the Health IoD, including the south west, north and northeast of the town. There are also pockets in the 40% lowest bracket of the Health IoD which score within the middle 20% of the overall IMD.

This can support the targeting of walking and cycling investment into these areas, which can encourage increased active travel and thus better health outcomes for residents.

3.9 Future Plans and Proposals

Transport Schemes

As set out in the Policy Review section, Kettering's planned transport investments are set out in the Kettering Town Transport Strategy (2015). This identifies schemes for delivery between 2015 (Plan's Implementation) and 2031 (Long Term).

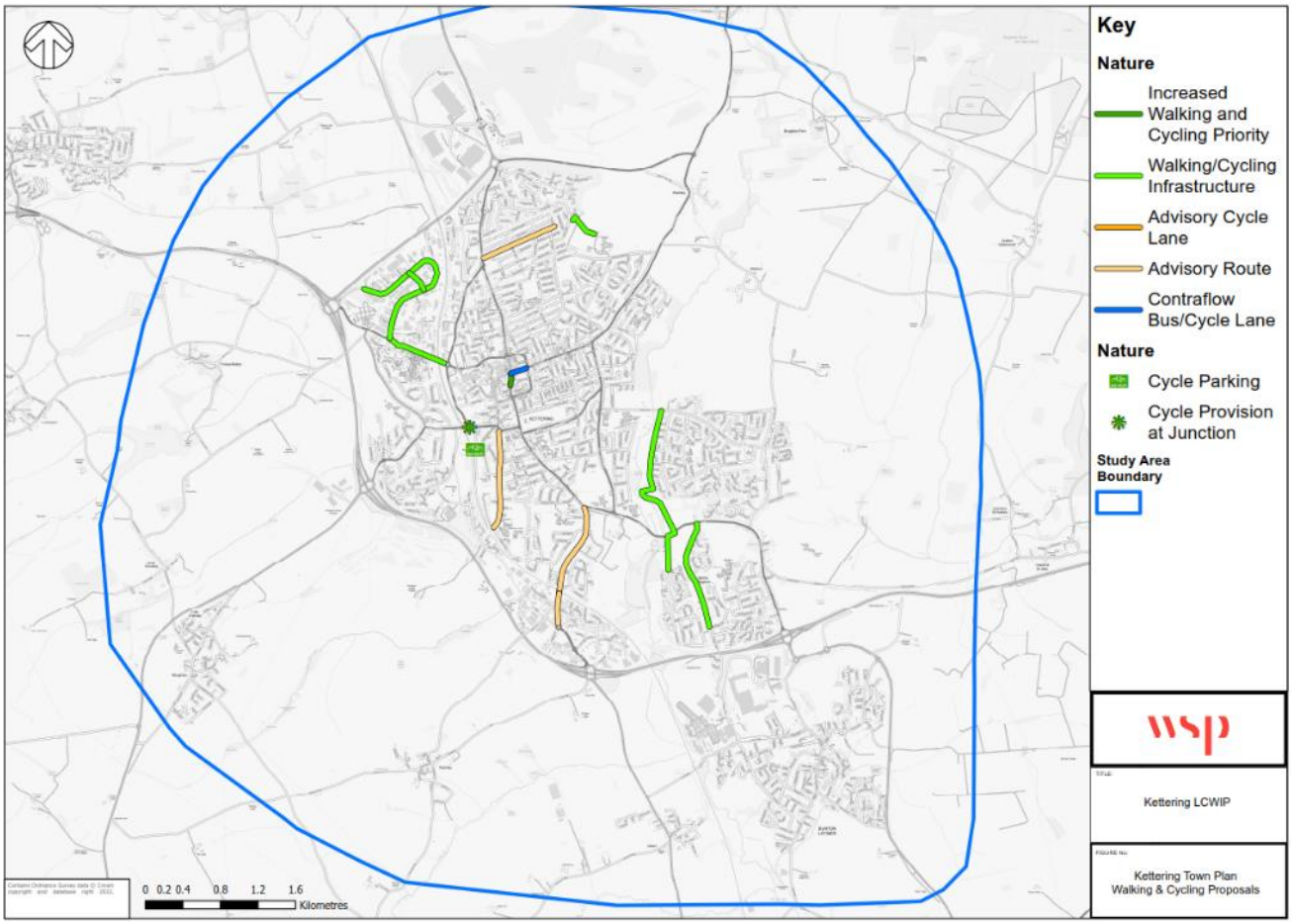
Improvements to the following cycle corridors are identified for delivery between the time of this reports writing and 2031, should funding and/or opportunity be available:

- Rothwell Road/ Telford Road Industrial Estate;
- Town Centre;
- Pytchley Road/ Kettering Venture Park;
- Rockingham Road alternative;

- Barton Seagrave links;
- Ise Valley; and
- Warkton Link.

These schemes are mapped in Figure 3-14:

Figure 3-14 – Kettering Town Transport Plan cycle corridor schemes

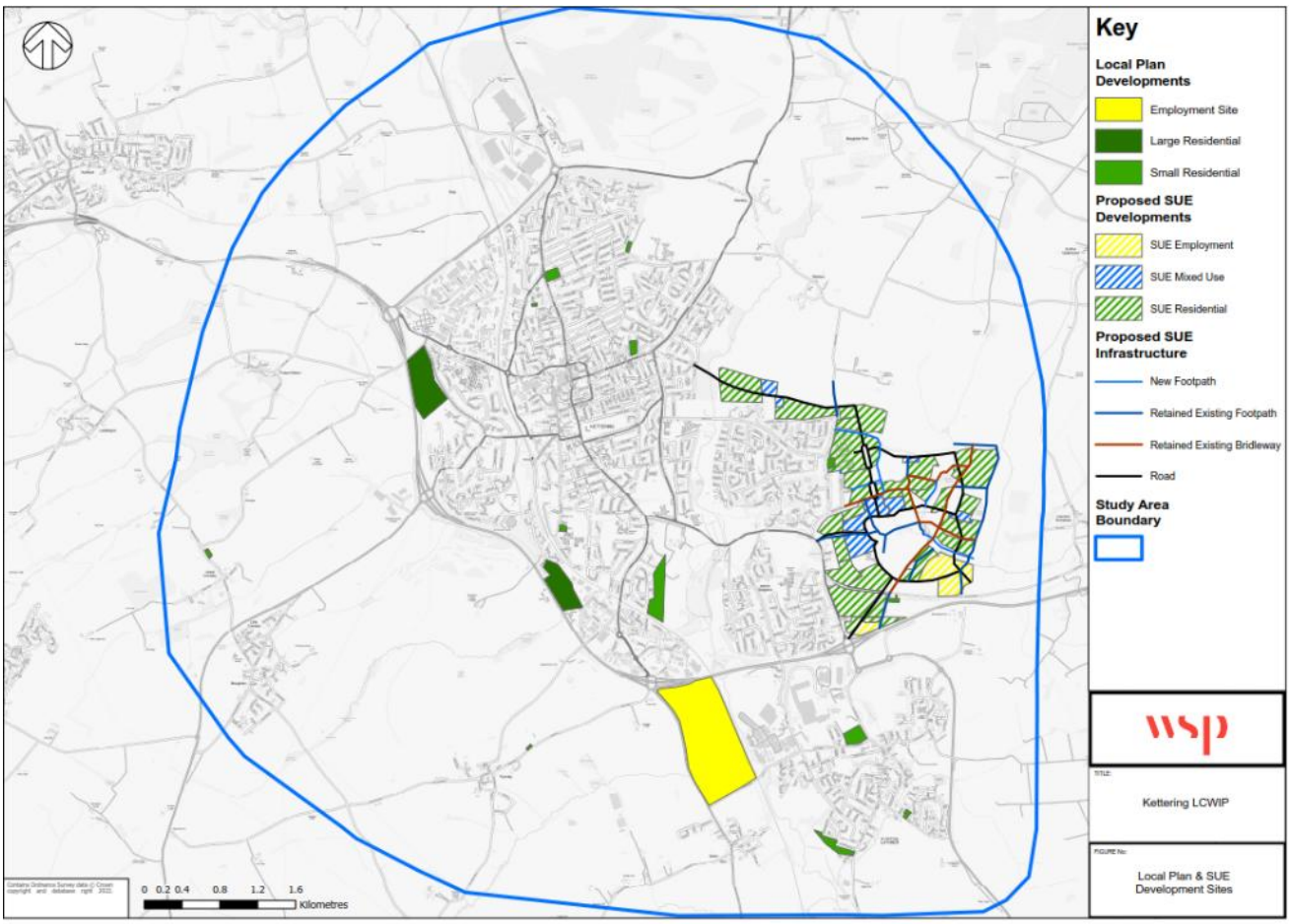


In addition to the improvements set out above, Hanwood Park includes its own internal walking/cycling network. This is discussed in greater detail below.

Land Use Developments

Kettering is currently undergoing a period of extensive growth, which is formed from a mixture of Local Plan Sites across the town and the large Hanwood Park development located to the town's east. These are presented in Figure 3-15.

Figure 3-15 – Land Use Developments



As shown above, there are also two large housing developments proposed to the west of the town, with several smaller developments (less than 100 houses) distributed across the town. The large housing site to the northwest of town is to consist of 350 dwellings, whilst that to the southwest is to consist of 217 dwellings.

In regard to employment, one site is included within the plan and this is located to the south of the town. The site is known as Tritax Symmetry Park and has outline planning consent for up to 2.3 million sq ft of logistics employment space. As of June 2021, infrastructure works commenced on site. This location has the potential to provide 2,800 jobs and reinforces southwest Kettering as a key employment area.

Hanwood Park is a large mixed-use development located to the east of Kettering. The development is to include 5,500 dwellings, four primary schools, a secondary school, local shops and health care facilities. The development also includes an employment site located to the south. With the provision of housing and supporting amenities within the boundaries of the development, Hanwood Park is intended to be relatively self-contained and encourage walking and cycling trips over private car use, an aim supported by the provision of car free shared walking and cycling paths.

Hanwood Park is connected to the rest of Kettering by links onto Deeble Road and Barton Road, with the site's walking and cycling network connecting to the existing shared walking and cycling lane on Barton Road.

3.10 Existing Public Opinion

In 2020, the former Northamptonshire County Council undertook a county-wide survey seeking people's opinions on walking and cycling within the County. The survey was undertaken using the Commonplace platform and received 11,000 replies from 3,000 respondents. Within Kettering, there were several key themes:

- A need for more cycle parking in the town centre;
- People feeling unsafe cycling on the town's main approach corridors. This is paralleled by a desire for segregated facilities for cyclists, so they don't have to mix with pedestrians or vehicles;
- Identification of the potential for more walking/cycling on the same corridors;
- Complaints of rat-running on secondary streets;
- Pavement parking on narrow secondary streets making it difficult to find safe room to cycle; and
- High levels of car use on the school run creating a risk to students walking or cycling to school.

3.11 Stakeholder Workshop

A digital stakeholder workshop was undertaken in October 2021 as part of the Kettering LCWIP study. The objective of the stakeholder workshop was to define the core walking zone (CWZ) and key walking routes into the CWZ, as well as to define the core cycle network. Workshop attendees included local councillors, representatives from the hospital, local employers, and other groups of interest.

The format of the session was split into:

- Introductions and objectives of the workshop;
- Defining the core walking routes; and
- Defining the core cycling network.

The stakeholders were split into 3 sub-groups annotating three separate maps to avoid over-crowding.

For the walking routes everyone was asked to drag a 500m radius circle over where they believed to be the core walking zone, and to draw on any key routes outside of this area which should be considered for audit. Once everyone had a chance to express their opinions, we focussed the group onto one map, combining the areas most common amongst the 3 draft maps.

Figure 3-16 shows the outcome from the discussion including the identified CWZ and potential key walking routes. The yellow highlighted routes are the finalised agreed routes for audit within this study. The main routes outside of the CWZ mostly were to destinations of interest, such as the railway station and the hospital.

Figure 3-16 – Stakeholder workshop output: Walking Routes

A similar process was repeated for the cycling routes, however instead of circles for a focus area, stakeholders were just asked to highlight key cycle routes within the study area. Again, the workshop participants regrouped to draw common routes onto one map, to come up with a core cycle network consisting of 5 key cycle routes up to 5km.

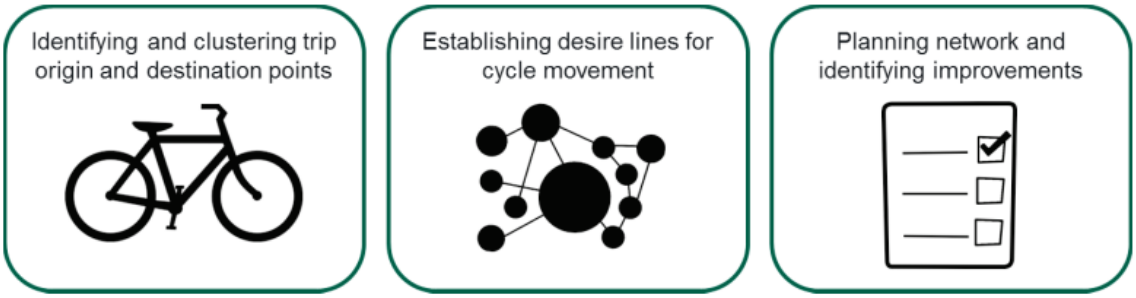
Figure 3-17 shows the agreed cycle routes to be audited; the dotted yellow lines show alternative routes to the north.

Figure 3-17 – Stakeholder workshop output: cycling routes

4.0 Stage 3: Network Planning

4.1 Introduction

Stage 3 of the LCWIP process involves:



The three boxes above are arranged left to right across the page. The first box contains a logo of a bicycle and text as follows: identifying and clustering trip origin and destination points.

The second box contains a logo of a stylized set of nodes linked by straight lines, and text as follows: establishing desire lines for cycle movement.

The third box contains a logo representing a tick list and text as follows: planning network and identifying improvements.

The key output for Stage 3 is a Cycle Network Plan, detailing preferred cycle routes for further development, which involves an evidence-based review to identify key desire lines between origins and destinations.

The process is founded on the principle of connecting people to places, ensuring that the proposed networks correspond to the routes people currently take, and those people are likely to want to take, both now and in the future. This method also helps to identify the long-term vision for the networks, while ensuring investment is focused on the key routes and the needs of cycle users. The resulting outputs are networks that are evidence-based and facilitate strategic development.

This section then summarises the following:

- Audit findings of existing cycling conditions;
- A summary of the main barriers to cycling across the network; and
- Initial improvement options (details provided in **Appendix B** – Cycle Route Summary Sheets).

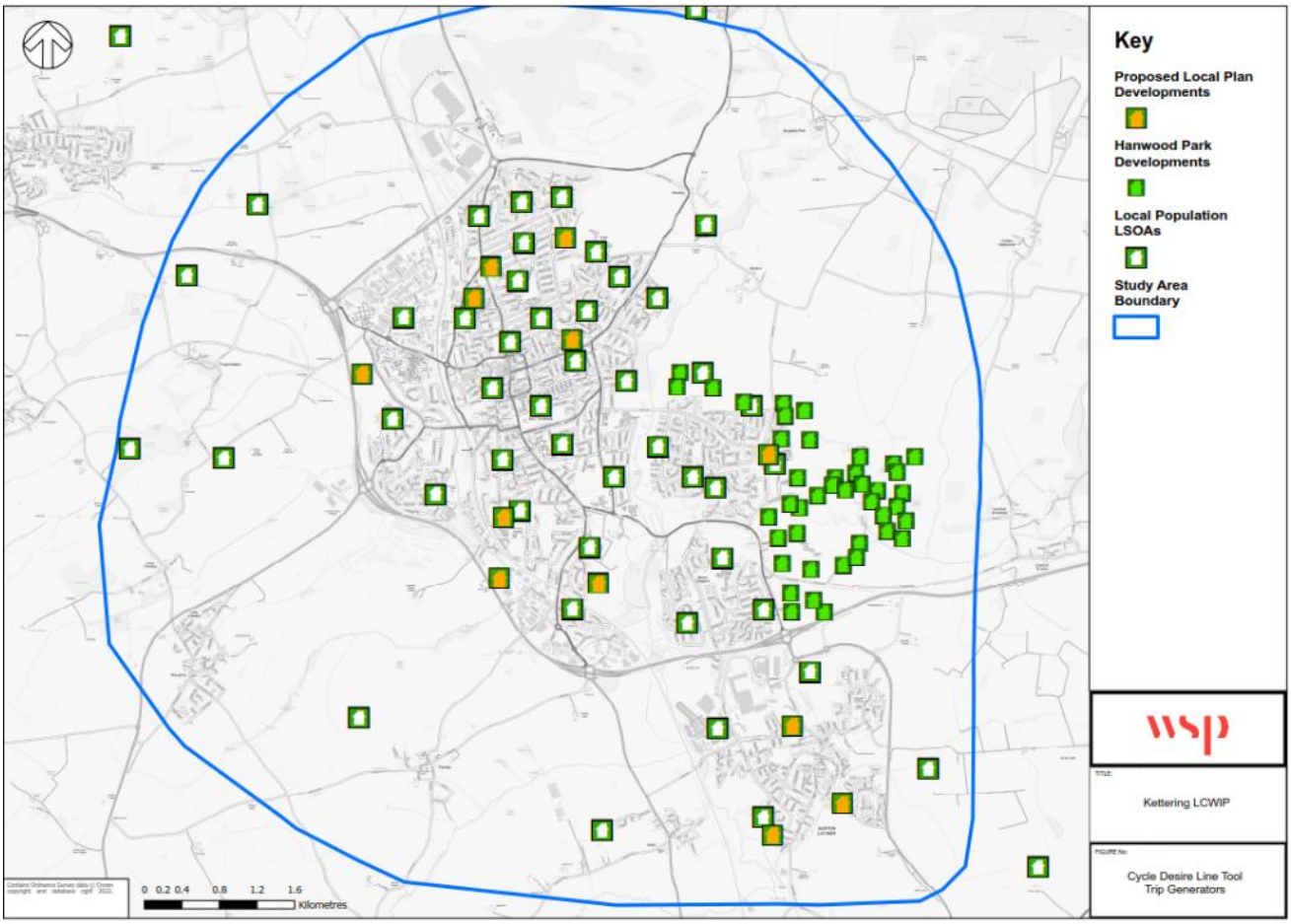
4.2 Cycle Desire Lines

To support the analysis of the existing and proposed cycle infrastructure in Kettering, the WSP Walking & Cycling Desire Line Tool was utilised, to identify potential cycle routing that might be realised with investment in infrastructure.

Cycle Desire Line Tool Inputs and Network

The desire line tool, developed by WSP, is a gravity model which identifies the most likely cycle routing between trip generators and trip attractors. Figure 4-1 shows the trip generators, i.e. residential developments and Figure 4-2 shows the trip attractors, i.e. employment sites, shopping centres, stations etc. These include both existing locations and those proposed within the Local Plan; most notably Hanwood Park to the town's east which has a mix of residential, employment and amenities associated with its development.

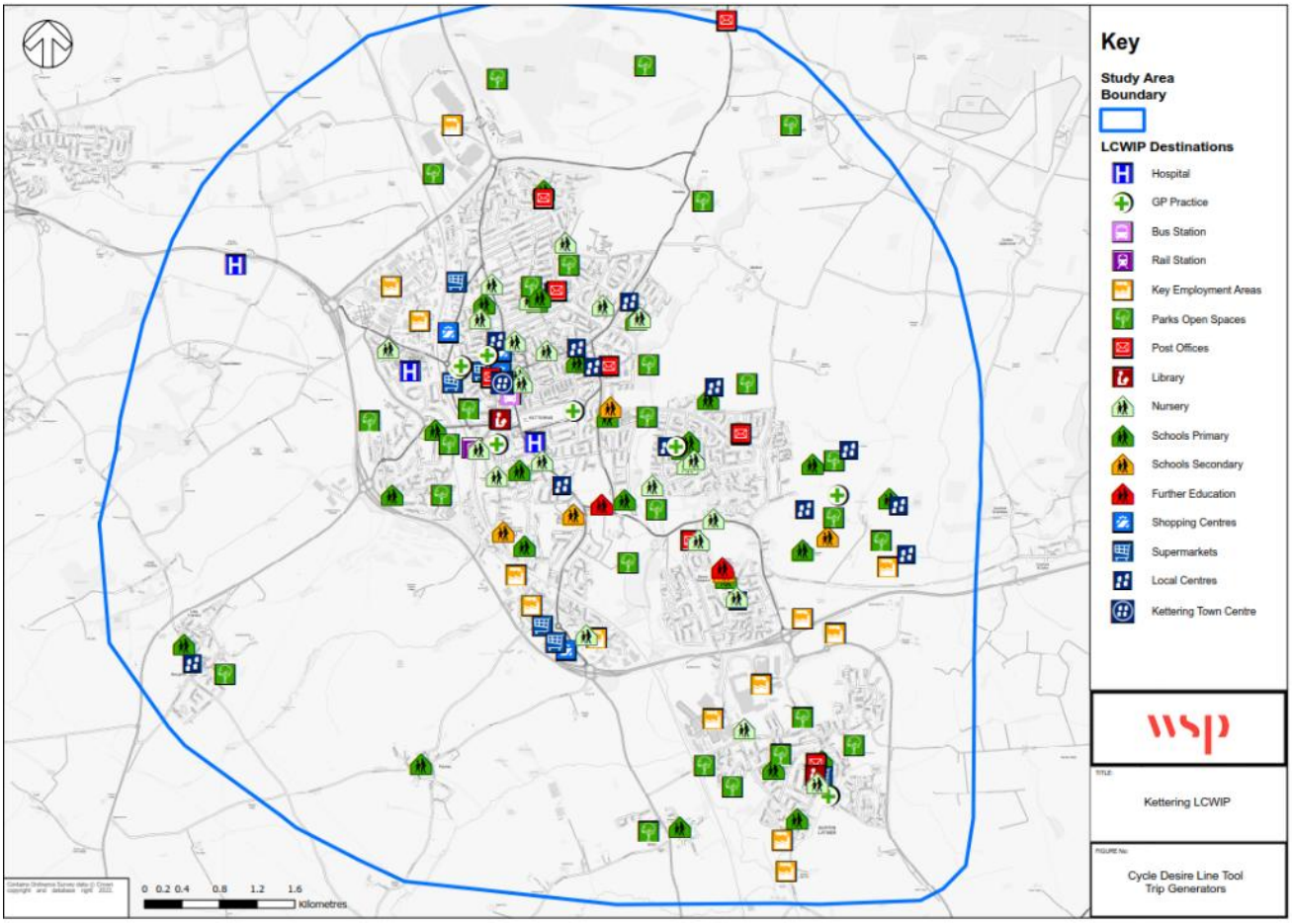
Figure 4-1 – Cycle Desire Line Tool – Trip Generators



The figure above shows the trip generators for the cycling demand model. The population from these generators are calculated on the following basis:

- **LSOA With Population**: Population at these locations was established from Local Survey data; and
- **SUE Plot & Local Plan Development**: Population for these forthcoming developments was established utilising Average Population per Household from the ONS (2020) which gave an average of 2.4 residents per dwelling.

Figure 4-2 – Cycle Desire Line Tool – Trip Attractors



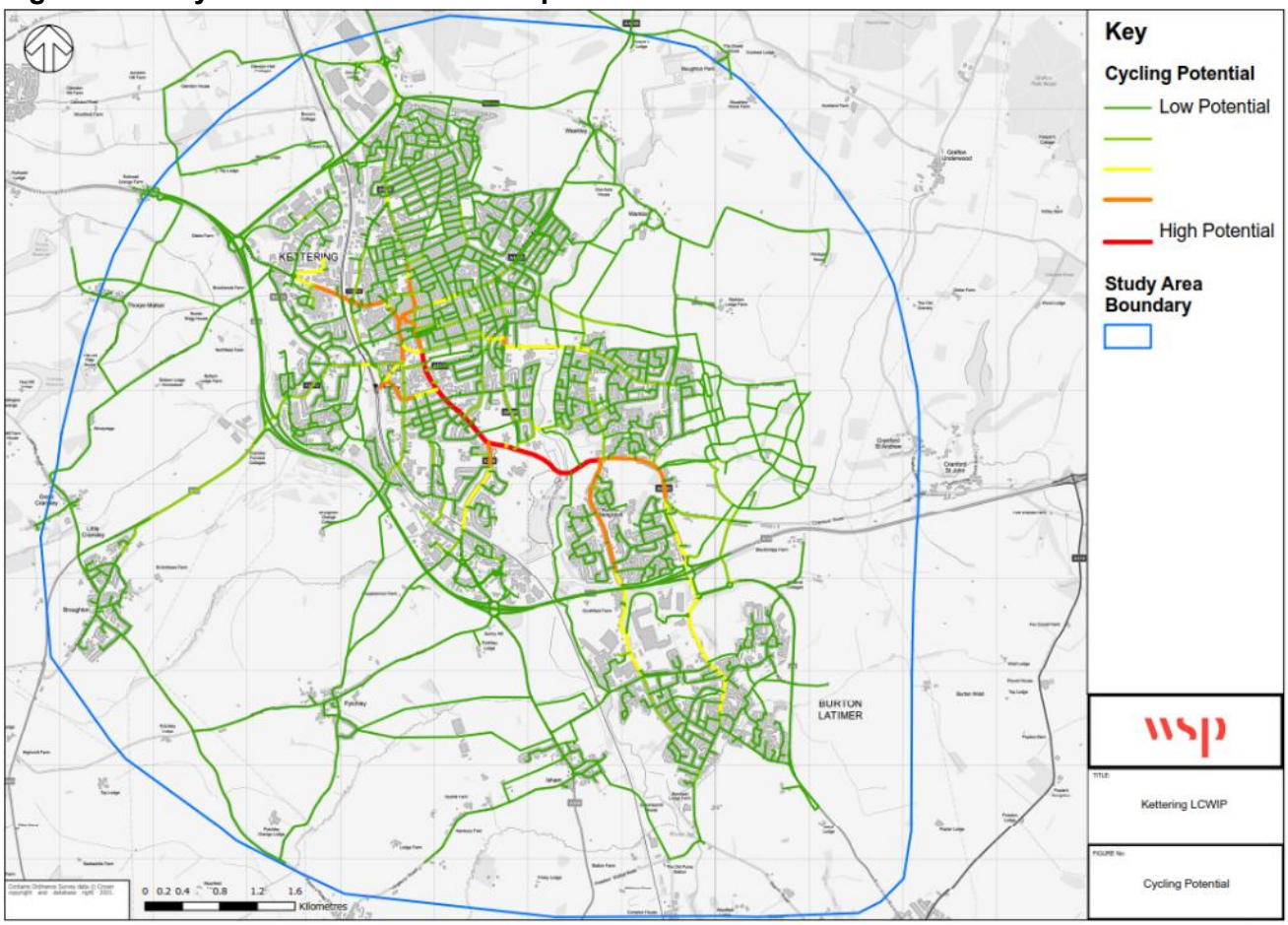
Like the Trip Generators, Trip Destinations also included development sites currently under construction, such as those at Hanwood Park. Trip destinations mapped above include key destinations such as hospitals, GP practices, rail stations, employment areas, urban centres, schools, nurseries and supermarkets.

The route network utilised in the Desire Line Tool comprised two elements. The first is the road and footway network in Kettering and the second is the existing and proposed walking and cycling infrastructure in the town. Existing infrastructure was extracted from the Kettering Cycle Network Map. Future infrastructure was obtained from the Local Plan, discussions with LA members and review of the Hanwood Park masterplan. This cycle network map, which sets out existing and already planned infrastructure, is set out earlier in the report in Figure 3-2.

Cycle Desire Line Tool Outputs

Figure 4-3 shows the cycle desire lines identified using the Cycle Desire Line Tool set out above.

Figure 4-3 – Cycle Desire Line Tool Output



As can be observed, there is a strong correlation between the outputs of the Cycle Desire Line Tool, the Propensity to Cycle Tool outputs and stakeholder discussions. Particularly, the A6003 forms a network 'spine' north-south, with secondary corridors leading off towards Kettering Business Park, Kettering General Hospital, Telford Way Estate and through Barton Seagrave towards Burton Latimer.

4.3 Design Principles

It is important to consider the key design principles and key considerations throughout the development of the cycle network, undertaking auditing and when considering potential improvements. The following documents have informed our key design considerations for the LCWIP:

- LTN 1/20: Cycle Infrastructure Design;
- Gear Change: A Bold Vision for Cycling and Walking; and
- The 2022 Highway Code.

An overview of the design principles in each document is provided in **Appendix A** – Policy Note.

Summary principles

The summary principles that are pertinent to the network development and scheme identification stages, that form the basis of this LCWIP are presented in Table 4-1.

.

Table 4-1 – Summary principles to inform the Kettering LCWIP

Summary Principles	
Cycle infrastructure should be accessible to everyone from 8 to 80 and beyond: it should be planned and designed for everyone. The opportunity to cycle in our towns and cities should be universal.	Cycle infrastructure should be designed for significant numbers of cyclists, and for non-standard cycles. The Government's aim is that thousands of cyclists a day will use many of these schemes.
Cycles must be treated as vehicles and not as pedestrians. On urban streets, cyclists must be physically separated from pedestrians and should not share space with pedestrians. Where cycle routes cross pavements, a physically segregated track should always be provided. At crossings and junctions, cyclists should not share the space used by pedestrians but should be provided with a separate parallel route.	Consideration of the opportunities to improve provision for cycling will be an expectation of any future local highway schemes funded by Government.
Cyclists must be physically separated and protected from high volume motor traffic, both at junctions and on the stretches of road between them.	Largely cosmetic interventions which bring few or no benefits for cycling or walking will not be funded from any cycling or walking budget.
Side street routes, if closed to through traffic to avoid rat-running, can be an alternative to segregated facilities or closures on main roads – but only if they are truly direct.	Cycle infrastructure must join together, or join other facilities together by taking a holistic, connected network approach which recognises the importance of nodes, links and areas that are good for cycling.
Cycle parking must be included in substantial schemes, particularly in city centres, trip generators and (securely) in areas with flats where people cannot store their bikes at home. Parking should be provided in sufficient amounts at the places where people actually want to go.	The simplest, cheapest interventions can be the most effective.
Schemes must be legible and understandable.	Cycle routes must flow, feeling direct and logical.

The principles in the table were considered during network planning and the development of interventions to support the delivery of high-quality infrastructure that will promote mode shift.

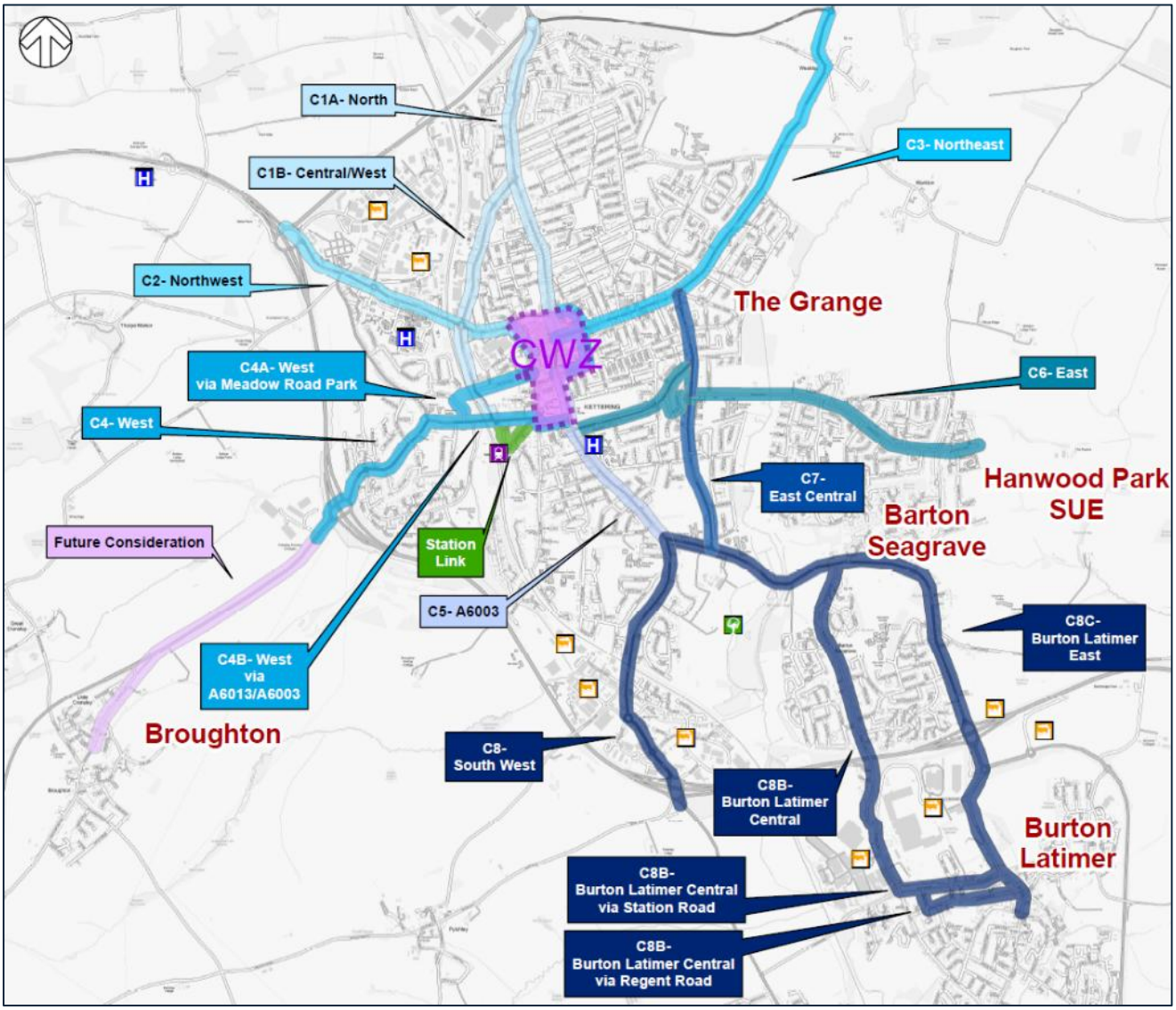
Throughout the Cycle Route Audits and the consideration of recommended improvement options, these design principles shaped the development of this LCWIP. Of particular relevance to Kettering is the recommendation for avoiding shared pedestrian and cycling use where possible, and the importance of continuity of provision. These issues are present across much of the study area and are considered through this document.

4.4 Cycle Route Audits

Based on this data, the information presented in Stage 2, and the outcomes from the stakeholder engagement sessions, the following Core Cycle Network and Core Walking Zone was established.

Following the development of the core cycle network, informed by all the stages outlined above as well as stakeholder consultation, detailed route audits of the key cycle network were undertaken.

Figure 4-4 – Audited Cycle Routes



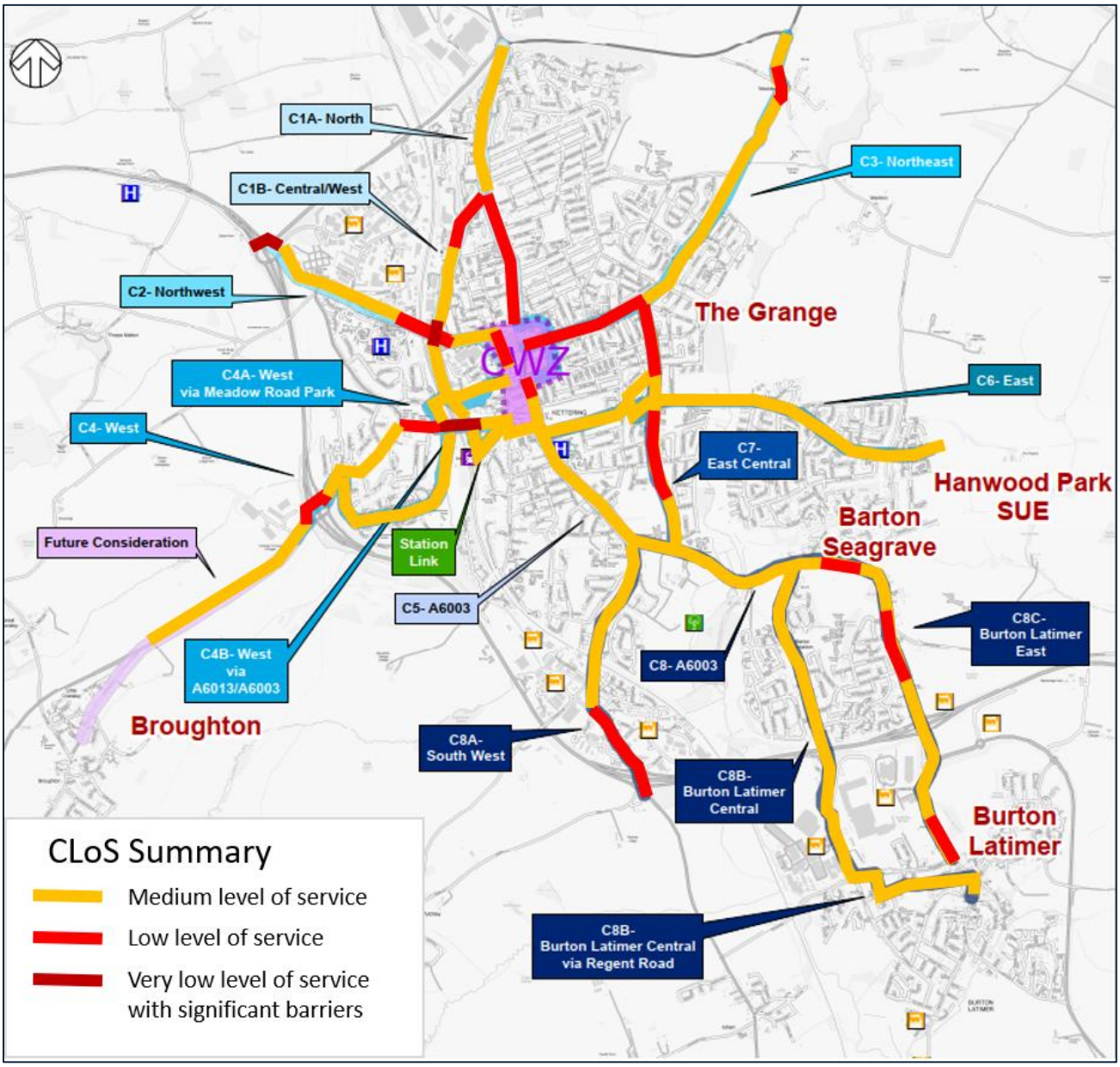
Between October and December 2021, route audits were undertaken by a combination of WSP, NNC, Northamptonshire Highways, and Brightwayz staff.

All routes, as well as the surrounding area and parallel routes, were walked or cycled. Key barriers and opportunities were assessed using a WSP-tailored version of the Cycling Level of Service (CLoS). The CLoS requires a detailed assessment of the characteristics: cohesion, directness, safety, comfort, and attractiveness.

Full detailed summary sheets for each route are presented in **Appendix B**.

Based on the observations during the site audits, the CLoS for each of the routes are summarised in Figure 4-5, presenting the level of service and quality of cycling provision on the audited routes.

Figure 4-5 – CLoS Summary Plan



The CLoS summary plan shows that there is a lack of consistent cycle provision across Kettering. The majority of cycle trips to/from key trip attractors/generators would experience low or very low levels of service for cycling along their journey. This creates a negative and intimidating environment for cycling, which would inconvenience existing cyclists and significantly discourage new cyclists.

Where there is provision, it is usually in the form of shared use footways, which often stop abruptly, creating a patchy provision that doesn't offer a realistic travel option for Kettering residents or visitors.

4.5 Summary of Recommended Improvements

Details of the recommended improvement options are presented in **Appendix B**, whilst Table 4-2 summarises the recommended improvements for each cycle route.

It should be noted that these are initial suggestions of what might overcome the major barriers to cycling and are considered potentially feasible based on initial observations. Further detailed feasibility studies would need to be undertaken for any routes taken forward for further consideration.

Table 4-2 – Recommended Improvements Summary

Cycle Route	Route Description	Summary of Improvements
1a	**North - Rockingham Road**	Two-way cycle track on the east side of the carriageway, along the length of Rockingham Road. Junction improvements at Northfield Avenue / Rockingham Road junction and improved signal crossing provision for cyclists and pedestrians at Rockingham Road / Eskdaill Street / Newland Street junction.
1b	**North - Northfield Avenue**	Potential alternative to 1a, using Northfield Avenue to provide a two-way cycle track on the west side of the carriageway. Upgrading the existing segregated shared use footway. Potentially significant re-design of the Northfield Avenue / Lower Street / Rothwell Road large roundabout junction to accommodate cycle movements, or at least improve Toucan crossings to provide north-south route.
2	**Northwest - Rothwell Road (Hospital Route)**	Improved pedestrian and cycle crossings on the A14 roundabout junction. Improved shared use provision on the north side of the carriageway from the A14 to the Telford Way roundabout junction. A two-way cycle track from Telford Way junction to the railway overbridge including relocation of bus laybys. Shared use footway under the railway bridge on the south side of Rothwell Road and across the Northfield Way junction. Two-way cycle track on the south side of Lower Street to High Street.
3	**Northeast - Connection to Weekley (along Stamford Road)**	Continue the shared use footway connecting Weekley to the existing cycle route to the north. Improve crossing provision in Weekley. Provide shared use footway to between Weekley Glebe Road and Weekley. Upgrade and re-enforce the existing low traffic route on the north side of Stamford Road. Two-way cycle track from Avondale Road to Windmill Avenue junction. Improve pedestrian and cycle crossing facilities at the Windmill Avenue / Stamford Road junction. Two-way cycle track on south side of Stamford Road / Montagu Street, to the junction with Victoria Street. Cycle crossing improvements at junction. Contraflow cycle lane on Montagu Street to Silver Street.
4	**West - Northampton Road and Lake Avenue**	Improve and upgrade shared use provision at A14 junction and Northampton Road. Two-way cycle track on Lake Avenue. New Toucan crossing to a new two-way cycle way and footpath adjacent to the railway line, through existing tunnel to a Toucan crossing on Northfield Avenue. Continue two-way cycle track along north side of Meadow Road.
5	**South - London Road (Connecting South to C8)**	A new Toucan crossing and shared use footway on London Road near Horse Market. Upgrade existing fragmented shared use footway on the east side of London Road to a two-way cycle track with improved junctions to the Barton Road junction.
6	**East - St Mary's Road and Deeble Road**	Two-way cycle track on the south side of Deeble Road, and St Mary's Road. Improved low traffic route through Oak Road, Ash Road, Elm Road middle section.
7	**East Central - Windmill Avenue**	Constrained section – Sections of localised improvements, but should perhaps consider alternative route (using Ise Valley route).

Cycle Route	Route Description	Summary of Improvements
8	**Wicksteed Park Route**	Replacing existing shared use provision on the north of Barton Road near Wicksteed Park, with a two-way cycle track. Maintain existing Toucan crossing and shared use footway near the St Botolph's Road junction.
8a	**South West - Pytchley Road**	Shared use and new crossing provision at junctions from the A14 junction to the railway overbridge. Two-way cycle track using the existing verge on Pytchley Road.
8b	**Barton Seagrave Route**	Minor improvements, widening and filling missing sections of existing shared use provision on Polwell Lane.
8C	**Burton Latimer – A6003**	Traffic calming to re-enforce street hierarchy on Kettering Road near Burton Latimer. Filling in the gaps to provide continuous shared use provision along south/west side of Barton Road.
9	**Station Link**	Improvements at the crossing provision at Northfield Avenue / Station Road junction. Two-way cycle track on north side of Station Road, and west side of Northfield Avenue. Relocation of the crossing from Station Road and Sheep Street. New Toucan crossing near the junction of Northfield Avenue and Northampton Road.

The design principles summarised earlier in this section have been used to shape the development of the recommended improvements. Following the audits and consideration of improvements options, the key factors to creating a high quality, connected cycle network that provides a realistic travel option for Kettering include:

- Continuity – Providing a clear a continuous level of provision across the town;
- Connecting the missing sections – Lots of the existing cycle routes have gaps. These need to be filled to meet the route's potential; and
- Safe and designated – Segregated provision is most attractive for new users. Two-way cycle tracks provide the safety of segregation from traffic and pedestrians, whilst efficiently using space on constrained routes.

These keys design features have shaped the recommended improvements that are detailed in the Route Summary Sheets in **Appendix B**.

4.6 Potential Infrastructure Types

The three main infrastructure options to be considered for improving cycle routes are segregated cycle tracks, toucan crossings, and clear priority when crossing side roads.

Segregated cycle tracks

The benefit of segregated cycle tracks is that cyclists are physically segregated from both motor traffic and pedestrians. Segregation of movements can improve safety and comfort for all road users. They can be often coloured to increase awareness of their presence and attractiveness of the street. Examples of segregated cycle tracks are shown in Figure 4-6 and Figure 4-7. Provision of green infrastructure with Sustainable Urban Drainage can transform spaces that may feel unwelcoming, to spaces that people want to use.

Figure 4-6 – Segregated cycle track in Birmingham (WSP Photograph)

Figure 4-7 – Segregated Cycle Track in Leicester (Google Street View)

Toucan crossings

In situations where full segregation is not a viable option, shared use may be appropriate instead which should be used in association with toucan crossings. Figure 4-8 shows an example of a toucan crossing.

Figure 4-8 – Toucan crossing in Leicester (WSP Photograph)

Priority crossings

Raised crossings reinforce that pedestrians and cyclists have priority over motor vehicles, as per the Highway Code 2022. Raising the road to footpath level creates a small speed hump encouraging motor vehicles to slow down and provide better visibility of pedestrians crossing. An example of a raised crossing can be seen in Figure 4-9.

Figure 4-9 - Raised crossing in Bradford (WSP Photograph)

Infrastructure that requires cyclists to give way at each side road involves a lot of stopping and starting. This can lead to some cyclists choosing to ride on the main carriageway instead, because it is faster and

more direct, even if less safe. Crossings of side roads should be therefore treated with cyclists' priority in mind. An example of priority at side roads is shown in Figure 4-10.

Figure 4-10 – Priority at side road crossings in Leicester (Google Street View)

5.0 Stage 4: Network Planning for Walking

5.1 Walking Network and Core Walking Zones

Stage 4 of the LCWIP process involves:

The picture above comprises three boxes arranged left to right across the page.

In the first box is a logo of a stylised pedestrian on a zebra crossing and text as follows: identifying and clustering trip origin and destination points.

The second box contains a logo of a stylised set of notes linked by straight lines and text as follows: establishing walking routes and core walking zones.

The third box contains a logo representing a tick list and text as follows: auditing the main routes and identifying barriers.

The key output for Stage 4 is a proposed future Walking Network Map, detailing preferred walking routes and Core Walking Zones (CWZs) for further development. When the routes and zones identified on the map are not of sufficient quality to meet the needs of people who would wish to travel by foot, area of Walking Infrastructure Improvements will need to be identified.

The process to generate these two key outputs involved the following steps:

- Identifying trip generators;
- Identifying Core Walking Zones;
- Identifying Key Walking Routes;
- Auditing Key Walking Routes; and
- Establishing locations for Key Walking Infrastructure Improvements.

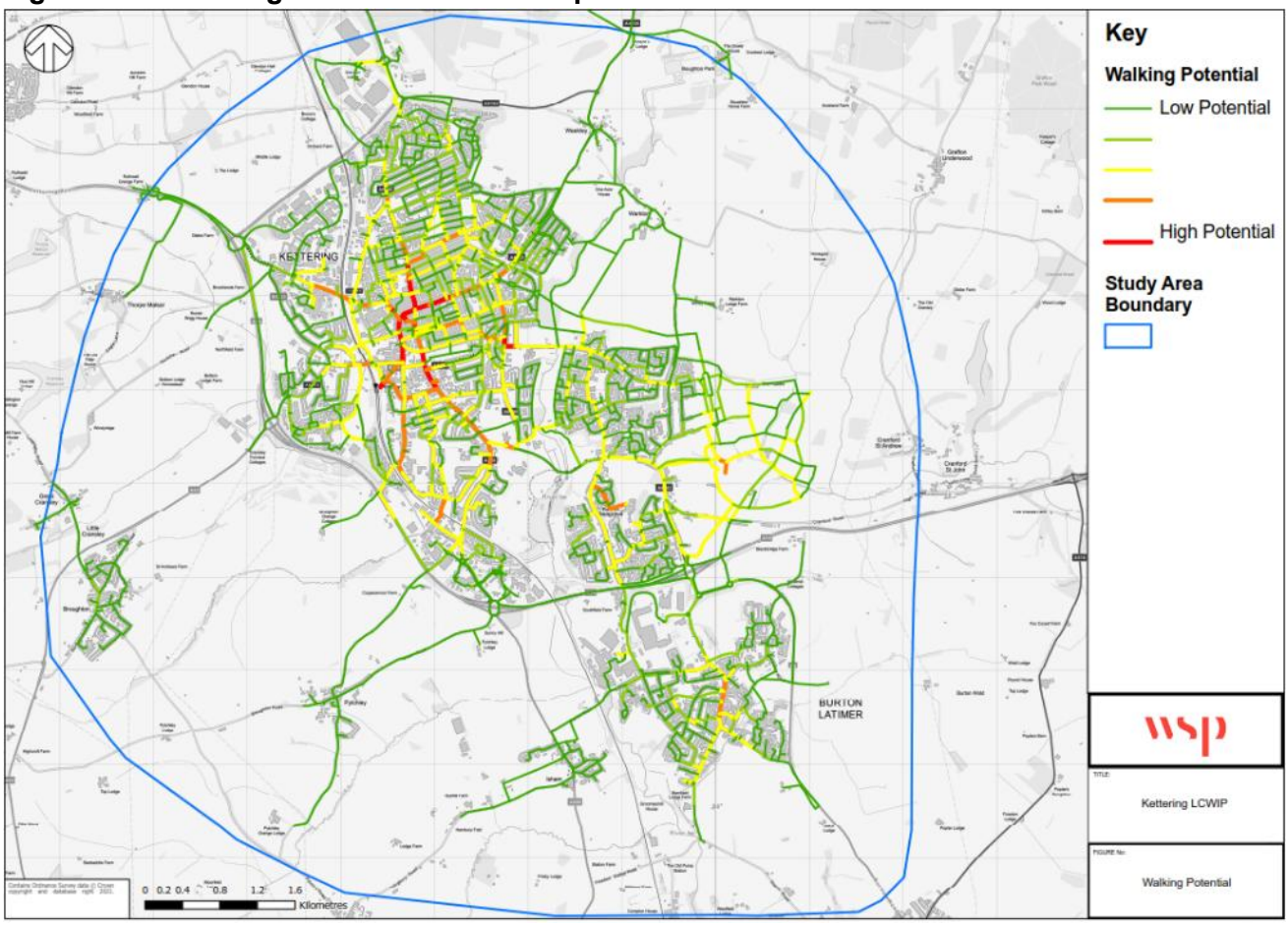
The process is founded on the principle of connecting people to places, ensuring that the proposed networks correspond to both the routes people currently take and those people are likely to want to take, both now and in the future. This method also helps to identify the long-term vision for the networks while ensuring investment is focused on the key routes and the needs of pedestrians. The resulting outputs are networks that are evidence-based and facilitate strategic development.

5.2 Trip Generators & Attractors

To support the analysis of the existing and proposed cycle infrastructure in Kettering, the WSP Walking & Cycling Desire Line Tool was utilised to identify potential flows that might be realised with investment in infrastructure. This tool utilises all of the data summarised in this report to present levels of Potential Walking Desire Lines.

Figure 5-1 shows the key desire lines for walking journeys within Kettering.

Figure 5-1 – Walking Desire Line Tool Output



As can be observed, there is a concentration of walking desire lines and potential walking movements around the town centre. Within the town centre, the A4300, Newland Street and Silver Street are highlighted as key movement corridors.

Approaching the town centre, Rockingham Road, Headlands, London Road and Rothwell Road stand out as key routes of access to the centre, whilst the Headlands also provides access to the railway station and Rothwell Road provides access to Kettering General Hospital and Telford Way industrial estate.

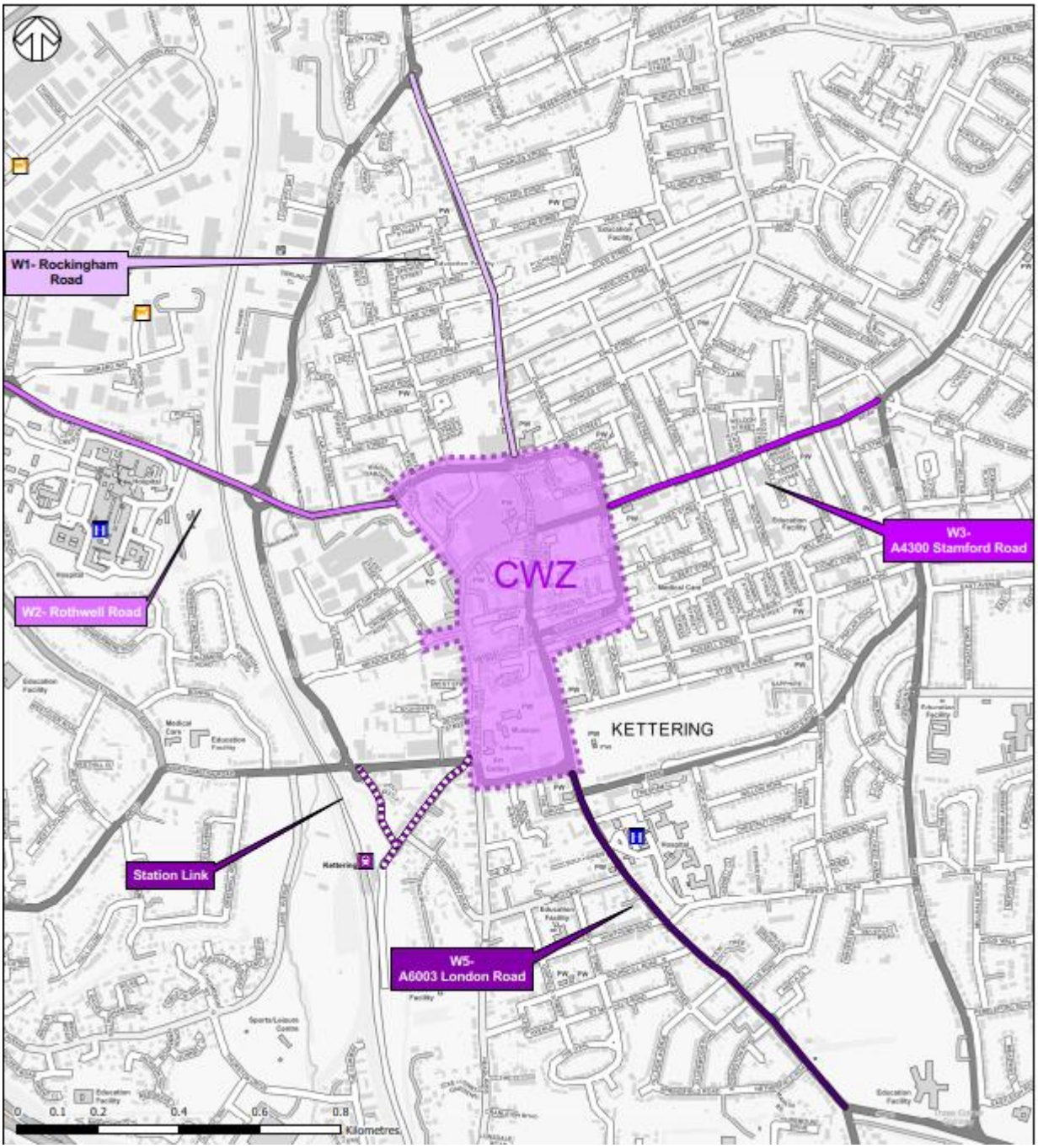
Outside of central Kettering, the largest area of high walking potential is Burton Latimer High Street. Similarly, local shopping streets in the Hanwood Park development and in Barton Seagrave also represent key desire points, alongside the educational facilities located nearby each.

Finally, there is some walking potential observed in relation to Kettering Business Park, to the town's south west, where a considerable amount of employment, leisure and retail opportunities can be found.

5.3 CWZ and Key Walking Routes

Based on the data presented in the WSP Desire Line Model, the data presented in Stage 2, and the outcomes from the Stakeholder Workshop, the following CWZ and five Key Walking Routes were established.

Figure 5-2 – CWZ and Key Walking Routes Plan



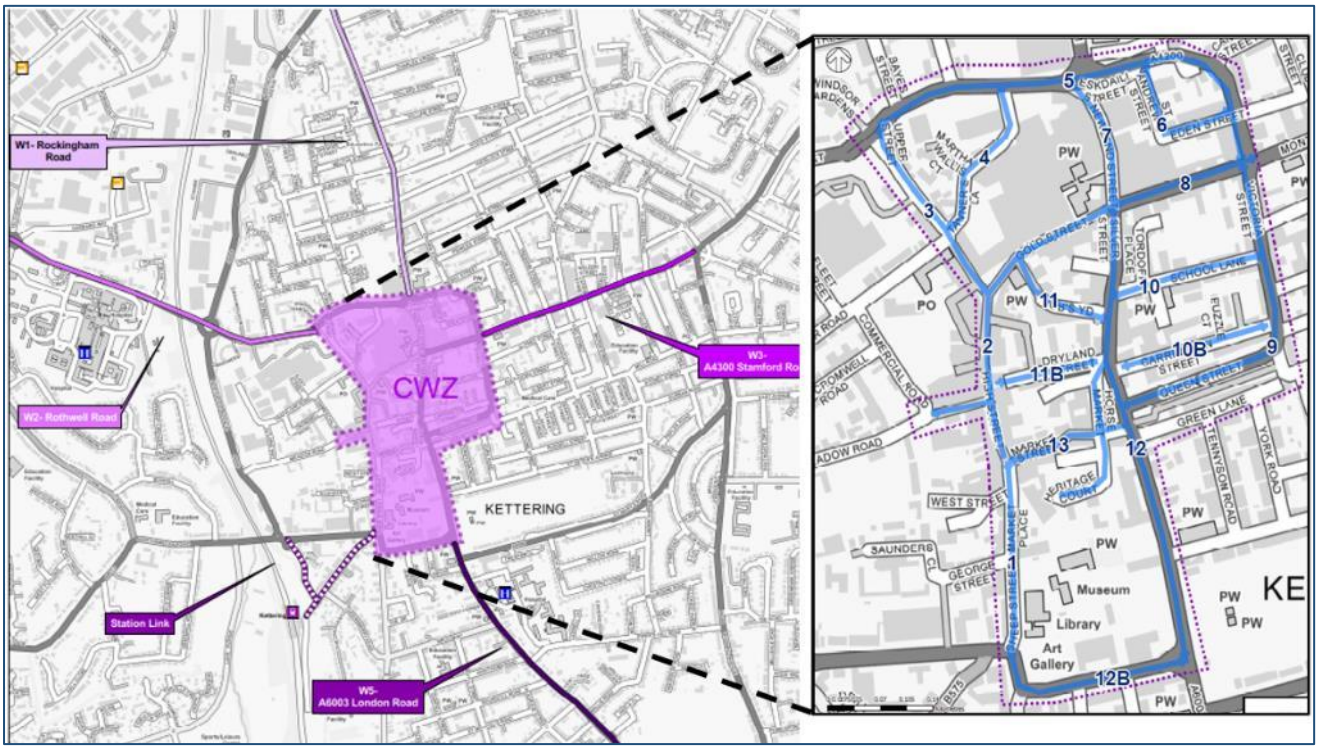
5.4 Walking Audits

During October 2021, the CWZ and key walking routes were audited by a combination of WSP, NNC, Northamptonshire Highways, and Brightwayz staff.

The process used for auditing the walking routes was a version of the DfT's Walking Route Audit Tool (WRAT). The WRAT scores each route on five different characteristics: attractiveness, comfort, directness, safety, and coherence.

Each person attending the walking audit scored the five attributes as either green (2), amber (1) or red (0); therefore 10 being the highest score that could be achieved for a route. The WRAT scores by different assessors were averaged to give the audit score.

Figure 5-3 – CWZ and Walking Routes Audited



The core walking zone (CWZ) is shown shaded in purple in Figure 5-3. Within the CWZ there were 13 separate routes which were audited, these can be seen as the blue lines in the inset map within Figure 5-3. Outside the CWZ, there were 5 walking routes that connected the CWZ to key trip attractors, such as the hospital and the train station. The additional walking routes (W1 - 5) can also be seen in Figure 5-3. As such, a total of 18 walking routes were audited using WRAT.

The full WRAT scoring spreadsheets are provided in **Appendix C**. Table 5-1 provides a summary of the scorings per walking route.

Table 5-1 – Walking Route Audit Scoring Table

CWZ Route #	Road Name	Score out of 10
CWZ Route 1	Sheep Street / Market Place	10
CWZ Route 2	High Street (+ Meadow Road)	8.25
CWZ Route 3	Lower street	1.75
CWZ Route 4	Tanners Lane	0.75
CWZ Route 5	Eskdaill Street	2
CWZ Route 6	Eden Street / Andrews Street	2
CWZ Route 7	Newland Street	5.5
CWZ Route 8	Montagu Street	3.25
CWZ Route 9	Victoria Street	3
CWZ Route 10	School Lane / Carrington St	4.5
CWZ Route 11	Dryland Street / Jobs Yard	3.5
CWZ Route 12	Silver Street	7.25
CWZ Route 13	Market Street / Heritage Court	10

Walking Link Route		Score out of 10
W1	Rockingham Road	6
W2	Lower Street / Rothwell Road	4
W3	Montagu Street / Stamford Road	5
W5	London Road	6
W Station Link	Station Road	8

The scores from the WRAT audit, are visualised in Figure 5-4.

Figure 5-4 – WRAT Score Summary Plan

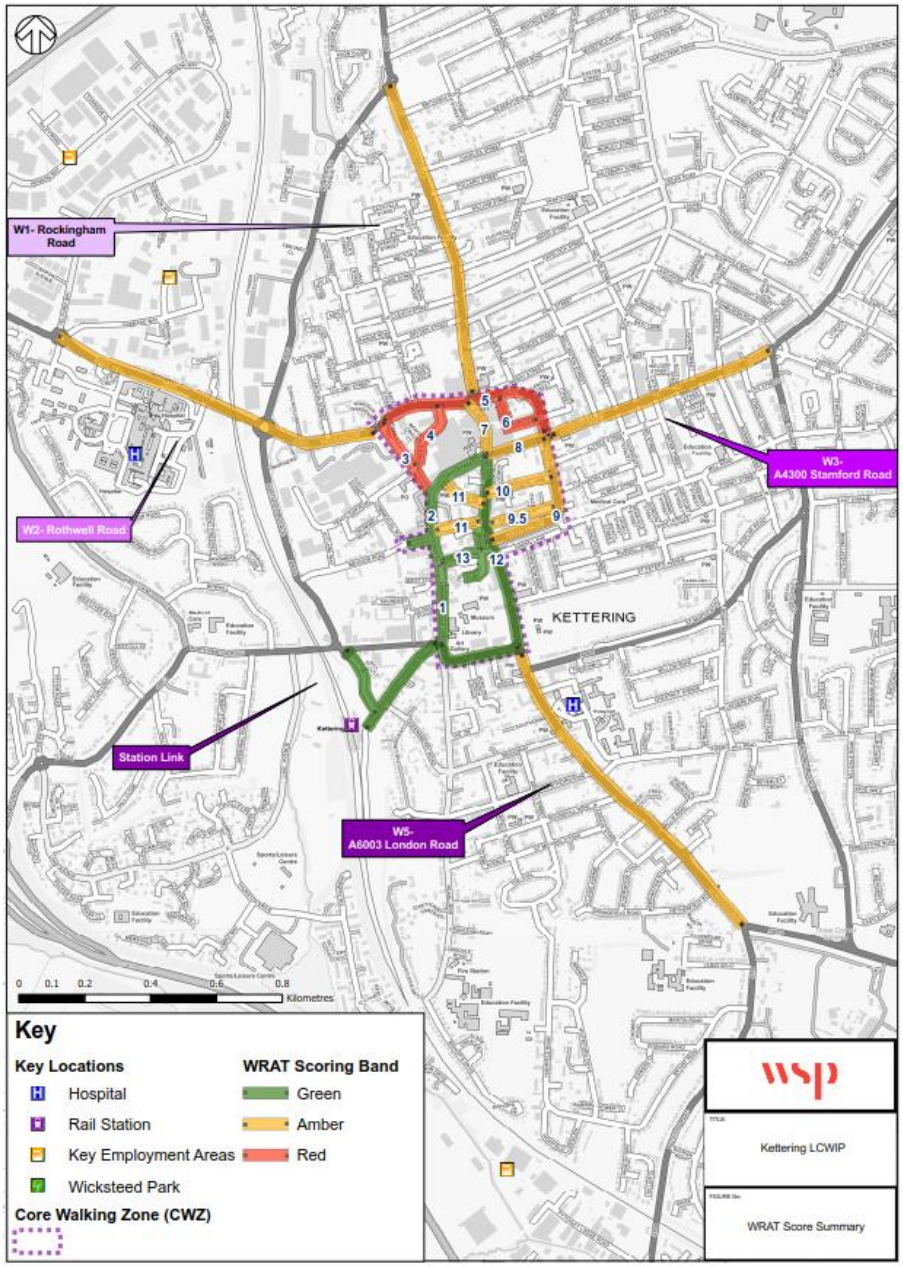


Figure 5-4 shows that the streets and links that currently have the lowest level of provision for walking are all located within the CWZ and are concentrated to the north of the town centre (CWZ Route 3 – Lower St, CWZ Route 4 – Tanner's Ln, CWZ Route 5 – Northall St / Eskdaill St, and CWZ Route 6 – Eden St).The

centre and south of the CWZ score reasonably high on the WRAT scoring and areas around Market Place and Sheep Street that have been recently upgraded have high quality pedestrian environments.

The walking links outside of the CWZ, including Station Road, achieve medium-high scores for walking environments according to the WRAT. Most are let down by missing dropped kerbs and indirect signalised crossings.

Figure 5-5 zooms in on the RAG scoring of the CWZ. The links that scored the lowest are concentrated in the north of the CWZ. The main barriers to walking in the north of the CWZ are that Eskdaill Street is a main road with large volumes of traffic making it an unsafe road. Additionally, pavements in this area are narrow and often missing drop kerbs.

The east links of the CWZ score slightly higher, however they are lacking safe crossing provisions along Victoria Street, and also have narrow pavements which are creating a barrier to walking.

Figure 5-5 – Barriers to Walking CWZ

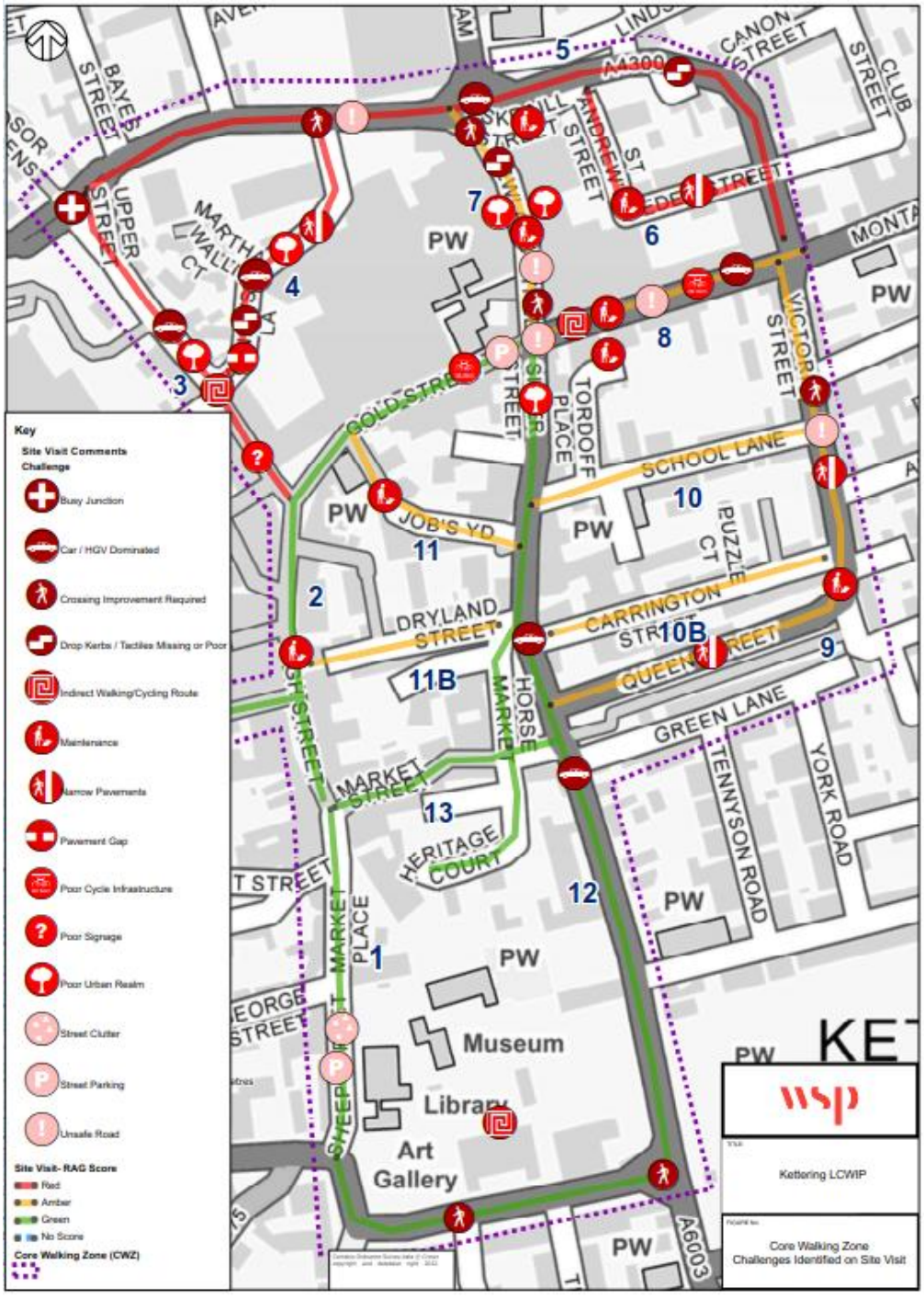
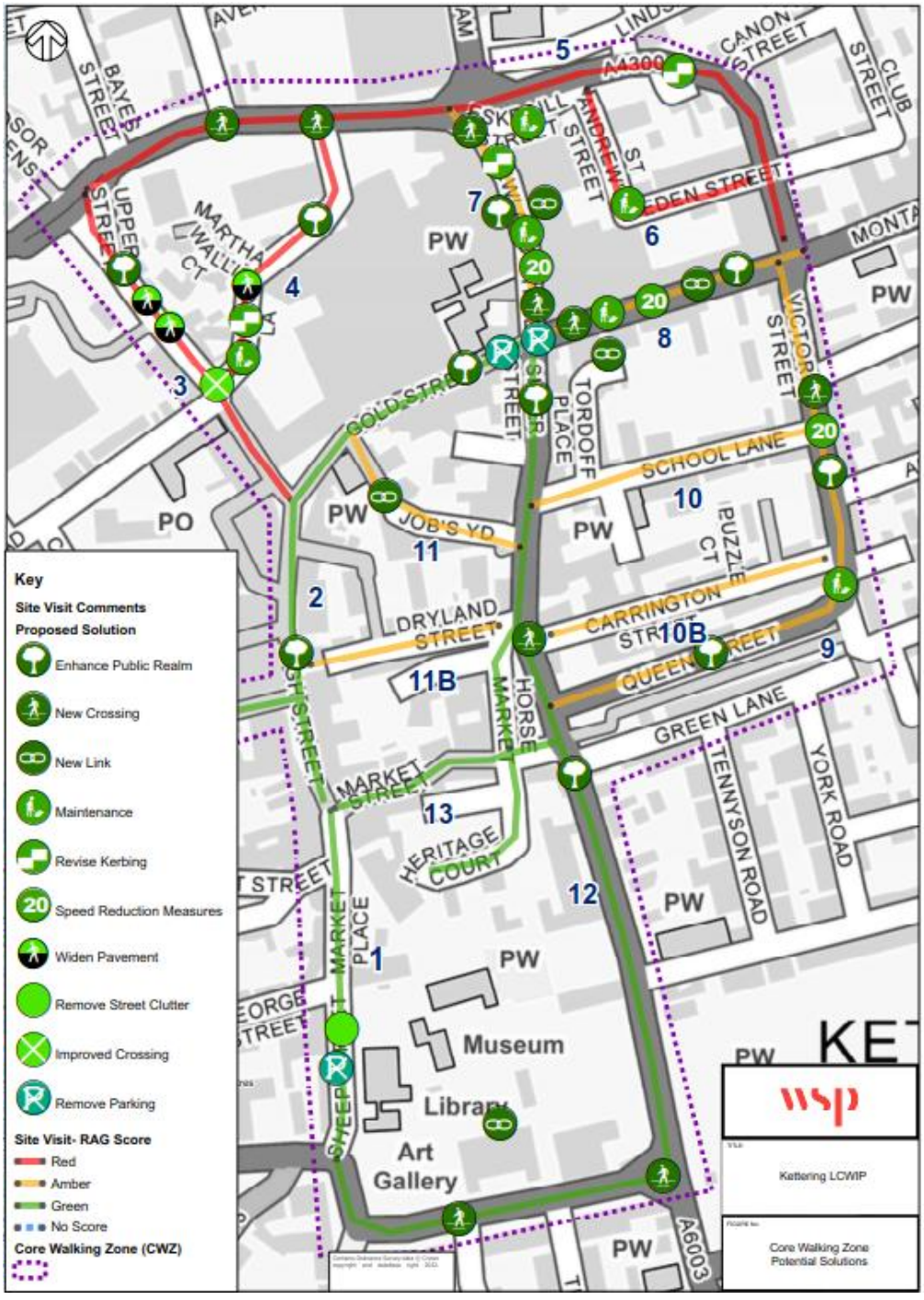


Figure 5-6 shows the recommended improvements to the CWZ to make it more accessible for pedestrians.

To improve Eskdaill Street, several additional crossings are recommended to make it safer for pedestrians to cross during peak hours. Other crossings are also recommended along CWZ Routes 3, 4, 7, and 9. Another suggested improvement is to revise kerbing and widen pavements along CWZ Routes 4 and 9 to make the walking environment more accessible to those who need the additional space and ramps.

Figure 5-6 – Improvements to Walking Environment CWZ



5.5 Walking Route Summary

Improvements are recommended along the 3 worst scoring routes from the WRAT assessment, as presented in Table 5-1. All 3 routes are located within the CWZ. It is noted that the walking-specific

improvements are all within the CWZ, however improvements proposed within the cycle routes in the previous chapter will also provide enhanced conditions for pedestrians which cover these routes outside of the CWZ.

The following CWZ routes have been considered for improvement options:

- Lower Street (CWZ Route 3) – Scored 1.75/10 in WRAT audit;
- Tanners Lane (CWZ Route 4) – Scored 0.75/10 in WRAT audit; and
- Northall Street / Eskdaill Street (CWZ Route 5) – Scored 2/10 in WRAT audit.

These CWZ routes should be prioritised for improvements to the pedestrian environment. Barriers identified are in Figure 5-5 and improvements are presented in Figure 5-6.

Table 5-1 – Walking Improvements Summary

CWZ Route	CWZ Route Name	Summary of Recommended Improvements
3	**Lower Street**	Reduce Lower Street / Tanners Lane junction to improve pedestrian crossing. Replace dropped kerbs or raise pedestrian crossing at supermarket access junction. Reduce Lower Street to one lane northbound, to reallocate space to improve pedestrian and cycle provision into the town centre. Remove pedestrian railings. Reallocate space to make less vehicle dominated, change street hierarchy, and create a high-quality pedestrian environment that feels part of the town centre and Core Walking Zone.
4	**Tanners Lane**	Replace missing dropped kerbs and footway maintenance, particularly near the car park access. Remove hatching and white lining to reduce carriageway width and widen footways. Remove texturised loading bay and provide a more formailsed pedestrian crossing point to improve access to the shopping centre.
5	**Northall Street / Eskdaill Street**	Remove right turn lanes to reduce carriageway width. Improve visibility and reduce supermarket car park exit to one lane to improve safety at junction. Replace missing dropped kerbs on Eskdaill Street. Consider reducing the number of signalised vehicle movements at the Rockingham Rd / A4300 junction to reduce the number of splitter islands and phases for pedestrian crossing movements.

6.0 Stage 5: Prioritising Improvements

6.1 Introduction

Stage 5 of the LCWIP process brings the separate walking and cycling strands back together to prioritise interventions across the LCWIP. The stage involves prioritising the improvements in the short, medium and long term.

The picture above shows three boxes arranged left to right across the page, each containing an illustrative logo and some text.

The first box contains a logo of a clock and text as follows: developing timescales for delivery over short, medium and long term.

The second box shows a logo of a pound sterling sigh and text as follows: high-level appraisal and costing of schemes.

The third box shows a logo of a tick list and text as follows: prioritising improvements considering effectiveness, cost and deliverability.

A key output of this stage is a prioritised programme of cycling and walking infrastructure improvements, which should help NNC develop a programme for the delivery of the LCWIP.

6.2 Cycle Route Cost Estimates

Initial high-level costings have been undertaken to estimate the capital costs of each the thirteen cycle routes.

To develop the cost estimate, a range of standard unit cost rates for different intervention types was applied. The costs are based on 2020 3rd quarter prices.

Unit cost rates in 2020 prices have been estimated for the following interventions:

- Off-road fully segregated cycle track;
- Shared use footway/cycleway;
- Stepped cycle track;
- Light segregation;
- On-road cycle lane;
- Cycle track resurfacing;
- Permanent footway of 2 metre width;
- 20mph zone with traffic calming measures;
- Toucan crossing;

- Zebra crossing;
- Raised crossing over side road;
- Comprehensive cycle route signage; and
- Island bus stop.

The following assumptions were made:

- 10% maintenance cost is assumed every 10 years;
- Optimism bias of 15% is assumed in all cases; and
- Additional 50% risk allowance to account for costs including but not limited to preliminaries, site preparation, land preparation and design costs.

It is also important to note the following key information, assumptions and exclusions for the cost rates:

The costs are based on 2020 3rd quarter rates and inflation has been excluded given the early stage of scheme development;

- All rates and prices are based on information from WSP's in-house database;
- All costs are exclusive of VAT, Stamp Duty, etc;
- All costs are exclusive of ongoing maintenance and renewal costs;
- All rates and prices are net of Contractors Fee/Overheads & Profit; and
- Indirect costs for items such as contingencies, general allowances and traffic management are assumed to be a percentage of the construction cost build ups. These are also based on typical percentage uplifts commensurate for this early stage of the study, based on previous experience.

The total estimated cost for each cycle route is provided in Table 6-1.

Table 6-1 – Estimated Cycle Route Costs

Cycle Route	Route Description	Estimated Cycle Route Cost
1a	**North - Rockingham Road**	£1,455,000
1b	**North - Northfield Avenue**	£1,107,000
2	**Northwest - Rothwell Road (Hospital Route)**	£574,500
3	**Northeast - Connection to Weekley (along Stamford Road)**	£870,000
4	**West - Northampton Road and Lake Avenue**	£2,343,000
5	**South - London Road (Connecting South to C8)**	£819,000
6	**East - St Mary's Road and Deeble Road**	£1,318,500
7	**East Central - Windmill Avenue**	£966,000
8	**Wicksteed Park Route**	£715,500
8a	**South West - Pytchley Road**	£759,000
8b	**Barton Seagrave Route**	£1,296,000
8C	**Burton Latimer – A6003**	£387,000

Cycle Route	Route Description	Estimated Cycle Route Cost
9	**Station Link**	£247,500

6.3 Cycle Route Appraisal

A high-level assessment of the Value for Money (VfM) for each cycle route has been undertaken by calculating an indicative Benefit - Cost Ratio (BCR) based on the limited information available at this stage of development.

The DfT's Active Modes Appraisal Toolkit (AMAT) (September 2021) has been used to appraise the proposed cycling interventions. This ensures that the calculation of benefits is in accordance with DfT guidance, set out in Transport Analysis Guidance A5-1 'Active Mode Appraisal' and its VfM can be consistently compared against other proposed schemes.

AMAT quantifies a wide range of potential benefits of active travel interventions including:

- Health improvements;
- Improvements to journey quality; and
- Modal shift impacts.

In order to calculate the impacts, the AMAT requires the following inputs:

- Scheme opening year;
- Last year of funding;
- Type of area scheme is located in;
- Number of walking and cycle journeys per day without the proposed scheme;
- Number of walking and cycle journeys per day with the proposed scheme;
- The average proportion of a trip which uses the scheme infrastructure;
- Current walking and cycling infrastructure for the route;
- Proposed new walking and cycling infrastructure;
- Proportion using the walking and cycling scheme to commute to work;
- Appraisal period; and
- Number of days the scheme data is applicable.

A number of assumptions are also included within the AMAT, where the DfT has provided default values based on a number of DfT defined sources and research.

The BCRs calculated for each of the cycle routes using the AMAT is presented in Table 6-2.

Table 6-2 – Scheme Benefit-Cost Ratios

Cycle Route	Route Description	High Level BCR
1a	North - Rockingham Road	0.99
1b	North - Northfield Avenue	0.98
2	Northwest - Rothwell Road (Hospital Route)	1.31
3	Northeast - Connection to Weekley (along Stamford Road)	1.42

Cycle Route	Route Description	High Level BCR
4	West - Northampton Road and Lake Avenue	0.74
5	South - London Road (Connecting South to C8)	1.46
6	East - St Mary's Road and Deeble Road	1.10
7	East Central - Windmill Avenue	1.38
8	Wicksteed Park Route	1.30
8a	South West - Pytchley Road	1.77
8b	Barton Seagrave Route	1.42
8c	Burton Latimer – A6003	0.84
9	Station Link	1.22

The calculated BCRs should be considered as indicative, given the level of uncertainty associated with the schemes at this early stage of development.

The appraisals will need to be updated and sensitivity tests undertaken as the schemes are progressed. Consideration should be given to additional benefits not captured in the AMAT. These could include benefits associated with improved safety or wider economic benefits. Therefore, it is likely that the benefits achieved through the proposed schemes have been underestimated, which would further strengthen the VfM case.

The appraisal aspect of the LCWIP is designed to feed into the Prioritisation framework in that the BCR for each route can be recorded on the framework once it has been established.

The AMAT summary sheets for each cycle route can be found in **Appendix D**.

6.4 Cycle Route Prioritisation

A bespoke prioritisation framework was developed by WSP and NNC, based on the DfT LCWIP guidance, which suggests considering schemes effectiveness, delivery against policy and deliverability. An additional criterion considering the financial aspect of schemes has also been included.

Under each of these criteria are several factors that the route sections are scored against. Table 6-3 presents details of the criteria.

Table 6-3 – Prioritisation framework criteria

Criteria	Details
Effectiveness (People)	▪ Improvements are scored against how effective they are at connecting people in the study area and the places they want to go to. ▪ Current usage considers the existing flows of cycling (and walking if possible). ▪ Forecast increase in users relates to what existing research shows the likely increase in users will be when a type of infrastructure is installed. ▪ Population density assesses the number of people who live near to a proposed intervention. ▪ Deprivation assesses the Indices of Multiple Deprivation score for the area that intervention is located in.

Effectiveness (Place)	▪ Trip generators that an intervention connects with are considered as a way of prioritising based on the effectiveness of connecting people and place. The trip generators that are deemed more important (or strategic) are scored higher, for example city/town centres.
Policy	▪ The policy section scores interventions based on how well they meet the policy objectives identified by NNC.
Financial	▪ A high-level estimate of cost is considered along with the potential for an intervention to gain funding.
Deliverability	▪ Scheme feasibility assesses the level of complexity involved in delivering the scheme. ▪ Dependency on other schemes relates to if an intervention is dependent on another scheme progressing to be deliverable. ▪ Political, statutory consultee and public acceptability considers the likely level of support from these groups.

The key outputs that the framework provides are a way of scoring and ranking each of the sections from all the priority routes to assist with prioritisation. The framework also combines the scoring from each of the individual sections to allow for the complete routes to be scored and ranked.

It should be noted that the prioritisation will be subject to change following consultation with key stakeholders. Other external factors, such as policy changes, and progress of other developments or highway schemes, will also impact on the scoring.

The latest full draft version of the Prioritisation Framework can be found in **Appendix E** based on the work by WSP through the technical support programme. A summary of the current scoring and initial prioritisation can be found in Table 6-4.

Table 6-4 – Prioritisation Framework scoring for cycle routes and ranking

Ranking	Cycle Route	Route Description	Timescale
1	**3**	Northeast - Connection to Weekley (along Stamford Road)	Short term
1	**6**	East - St Mary's Road and Deeble Road	Short term
3	**5**	South - London Road (Connecting South to C8)	Short term
3	**8a**	South West - Pytchley Road	Short term
5	**9**	Station Link	Medium term
6	**2**	Northwest - Rothwell Road (Hospital Route)	Medium term
7	**1a**	North - Rockingham Road	Medium term
7	**8c**	Burton Latimer – A6003	Medium term
7	**8**	Wicksteed Park Route	Long term
10	**7**	East Central - Windmill Avenue	Long term
11	**1b**	North - Northfield Avenue	Long term

Ranking	Cycle Route	Route Description	Timescale
12	**4**	West - Northampton Road and Lake Avenue	Long term
13	**8b**	Barton Seagrave Route	Long term

Initial prioritisation has been undertaken at a high-level, based on the highest ranking cycle routes. As such, routes 3, 6, 5 and 8a have been prioritised for delivery within the short term.

However, as aforementioned, this LCWIP is a live document which means that the above prioritisation order and timescales are not rigid to the above timescales; and that flexibility is vital to take account of further studies and analysis of the cycle routes when undertaken.

6.5 Walking Route Prioritisation

As aforementioned in Stage 4, based on the WRAT scoring and the likely footfall / desire lines presented in this report, the following walking routes within the CWZ have been considered for improvement options.

- Lower Street (Route 3);
- Tanners Lane (Route 4); and
- Northall Street / Eskdaill Street (Route 5).

All three of these walking routes have been prioritised in the short term.

It should also be noted that improvements proposed within the cycle routes also provide enhanced conditions for pedestrians, including:

- Improved signalised crossing provision for both cyclists and pedestrians;
- Extending shared footways; and
- Traffic calming measures.

7.0 Next Steps

7.1 Integrations and Application

The final stage of the LCWIP process considers how the Kettering LCWIP should be integrated into local policy, strategies and plans, as well as practical applications of the outputs of the LCWIP.

Consideration should be made during the production of key documents such as the Local Plan to fully integrate the outputs from the LCWIP into local policy so that a stronger and more holistic case for government funding is made.

7.2 Funding Mechanisms

The LCWIP sets out the case for future funding for cycling and walking infrastructure. As set out in this LCWIP, there are a number of compelling reasons for central government to invest in active travel infrastructure to level up cycling and walking provision in Kettering. In addition, local funding contributions are likely to be available from developer contributions, other bids and potentially contributions from limited local council budgets.

NNC will need to be flexible to adapt to changing circumstances and opportunities to secure future funding streams from central government.

High level consideration has been given to the potential funding sources that could be pursued in the delivery of the LCWIP interventions and next steps. The interventions identified in this LCWIP could potentially be supported by multiple funders and future funding opportunities including, but not limited to:

- DfT Active Travel Fund;
- The Levelling Up Fund;
- The Capability Fund;
- Future High Streets Fund;
- Heritage Horizon Awards and other National Lottery Heritage Fund opportunities;
- Network Rail 'Access for All' Programme;
- Towns Fund;
- Private developer contributions (e.g. Section 106);
- Future iterations of Access Fund-type funding;
- Synergies with ongoing workstreams within Kettering;
- Integrated Transport Block;
- Maintenance funding;
- Local Growth Fund and synergies with potential large local major schemes;
- National Productivity Investment Fund (NPIF);
- Housing Infrastructure Fund (HIF);
- Private financing initiatives;
- Other innovative fiscal mechanisms to help fund investment in infrastructure;
- Reprioritisation of Vehicle Excise Duty; and
- Other government funding streams not yet announced.

It is important to note that the LCWIP sets out the case for investment from the above funding sources, but also from funding sources to be released in the future. The emphasis of funding for active travel interventions has increased over the years leading to a record amount of government investment in cycling

and walking. There may also be opportunities to incorporate cycling and walking improvements as part of other transport schemes.

This is demonstrated by recent government initiatives such as the DfT Active Travel Fund which significantly increased active travel funding to restart local transport and build on active travel momentum following COVID-19. Also the Levelling Up Fund, which provides funding to improve infrastructure (such as active travel) in order to improve people's everyday life, make journeys easier and ultimately level up opportunities across the UK. These funding streams are particularly relevant to Kettering, in terms of boosting the economy, improving much needed active travel connectivity and reducing deprivation levels.

Further funding streams such as the Major Road Network and Large Local Majors funding may also help to enhance active travel; such as funding for the proposed A509 Isham Bypass which has the potential to alleviate traffic and create an active travel corridor on the existing A509 to connect the village of Isham and Kettering.

7.3 Active Travel England

In January 2022, the Department for Transport created a new executive agency, Active Travel England (ATE). ATE was created due to the government investing a record amount in active travel to help deliver a healthy, safe and carbon-neutral transport system.

ATE works to ensure that active travel investment is well spent and to help raise the standard of cycling and walking infrastructure. ATE manages the national active travel budget; and inspects finished schemes and ask for funds to be returned if works have not been completed as promised or to incorrect timescales. ATE also assesses LAs performance on active travel through inspections and reports; with findings influencing the funding that authorities receive across all transport modes.

7.4 Reviewing and Updating

In line with other transport plans, it is envisaged that the LCWIP will need to be reviewed and updated approximately every four to five years to reflect progress made with implementation. It may also be updated if there are significant changes in local circumstances, such as the publication of new policies or strategies, major new development sites, or new sources of funding.

Appendix A – LCWIP Policy Note

Appendix B – Cycle Route Summary Sheets

Appendix C – WRAT Scoring Spreadsheets

Appendix D – AMAT Summary Sheets

Appendix E– Prioritisation Framework