



Local Cycling and Walking Infrastructure Plan (LCWIP)

LCWIP DRAFT

Background

WSP has been commissioned by Bracknell Forest Council to develop a borough-wide Local Cycling and Walking Infrastructure Plan.

Local Cycling and Walking Infrastructure Plans (LCWIPs), as set out in the Government's Cycling and Walking Investment Strategy, are a strategic approach to identifying cycling and walking improvements required at a local level.

This LCWIP builds on the 2021 LCWIP for Bracknell Town Centre, incorporating work undertaken on network planning and integrating the proposed routes within a borough-wide network.

Schemes have been updated to recognise the step change in ambition expected from central government following publication of Gear Change (2020) and LTN 1/20.

Key outputs from this LCWIP include:

- > Primary and secondary cycle network
- > Primary and secondary walking network
- > Scheme concepts
- > Prioritised list of interventions

Contents

This LCWIP is structured into six phases which broadly align with the first five stages of the LCWIP process outlined by the DfT in the LCWIP technical guidance (2017).

This main report adopts this structure, with a summary of each chapter outlined below:

Chapter 1: Defining the approach

Outlines the methodology this LCWIP has adopted and its alignment with the DfT recommended process.

Chapter 2: Information Gathering and Baseline Analysis

Presents the background information collected as part of this LCWIP including the extent of existing infrastructure and analysis of potential walking and cycling desire lines. This chapter also outlines findings from public engagement.

Chapter 3: Network Planning

Presents the primary and secondary walking and cycling networks and outlines how these have been informed by the baseline analysis.

Chapter 4: Scheme Concept Development and Definition

Summarises concepts for infrastructure improvements on the identified routes that are compliant with latest government guidance on walking and cycling infrastructure design.

Chapter 5: Investment Prioritisation and Cost Estimation

High level cost estimates for the infrastructure improvements proposed are provided

Chapter 6: Integration and Application

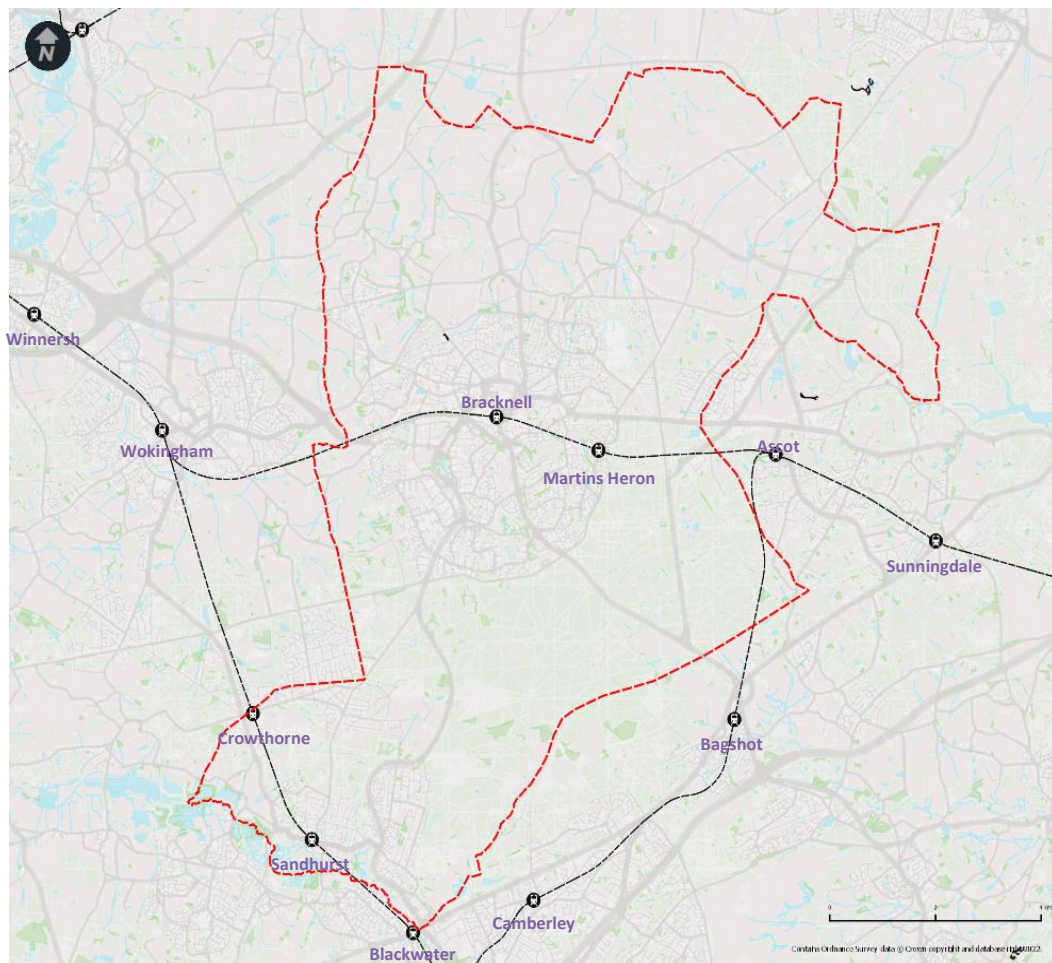
Considers how the LCWIP should be integrated into local policy, strategies and plans, as well as possible practical application of outputs.

Chapter 1 – Defining the approach

To develop this LCWIP a project schedule, governance structure and geographical scope were agreed during an inception stage in November 2021. The geographical extent of this LCWIP reflects the Bracknell Forest Unitary Authority Boundary shown in Figure 1, whilst also considering potential for cross-boundary connections with neighbouring local authorities. Key population centres within this boundary include Bracknell Town Centre, Martins Heron, Crowthorne and Sandhurst.

The agreed methodology for this LCWIP is summarised on the subsequent pages.

Figure 1 – geographical extent of this LCWIP



Information gathering and baseline analysis

This LCWIP has collated information and data that can inform the development of a walking and cycling network.

Existing infrastructure considered as part of this process includes; cycle infrastructure, severance issues, local plan allocations, public transport provision and classification of highways.

To ensure the LCWIP aligns with other strategic objectives in Bracknell Forest, relevant policies such as the Bracknell Forest Climate Change Strategy, the Local Transport Plan and the emerging Bracknell Local Plan have been reviewed alongside plans for future active travel routes.

Identifying desire lines

A GIS model has been developed to identify potential new journeys that could be walked and cycled. Census data and information on large, planned developments has been used to determine trip origins (where trips start), whilst destinations incorporate employment sites, schools, supermarkets, hospitals, GPs and leisure centres. The outputs of this model have been presented alongside the DfT's Propensity to Cycle Tool to show key desire lines for walking and cycling.

Engaging with communities

A Commonplace engagement website was shared with residents, visitors and stakeholders to capture views on issues by allowing users to place comments on an interactive map. The site asked respondents to locate where issues were present, and where they felt investment in walking and cycling infrastructure would be valuable.

Network Planning

Using the background data collected, a walking and cycling network for the borough was developed that:

- > Filled gaps in the existing network / infrastructure
- > Served key desire lines not currently served, as identified by our spatial analysis
- > Considered feedback received during the public engagement

A primary network was developed that established links with high forecast active travel flows. Whilst secondary routes were added to enhance overall network connectivity and where they had been identified by stakeholders.

The primary walking and cycling routes were then audited in person by Bracknell Forest Council using the Department for Transport Route Selection Tool (RST) and the Walking Route Audit Tool (WRAT).

Scheme Concept development and Definition

The outcomes from the route audits were used to produce high level active travel infrastructure options consistent with the latest government guidance contained within Gear Change (2020) and Local Transport Note (LTN) 1/20.

The outputs of this exercise are summary plans for each of the identified primary routes, with consideration given to suitable improvements that appear achievable given on-site constraints.

Investment Prioritisation and cost estimation

High level cost estimates were calculated for the infrastructure proposals contained within the scheme concepts. These were fed into a Multi-Criteria Appraisal Tool (MCAT) tool, which ranked the schemes according to their alignment with agreed criteria, including:

- > Forecast increase in walking and cycling
- > Catchment population
- > Existing infrastructure condition
- > Alignment with existing network
- > Road safety
- > Proximity to schools, employment and railway connections
- > Rural severance
- > Carbon/air quality
- > Cost effectiveness
- > Stakeholder support

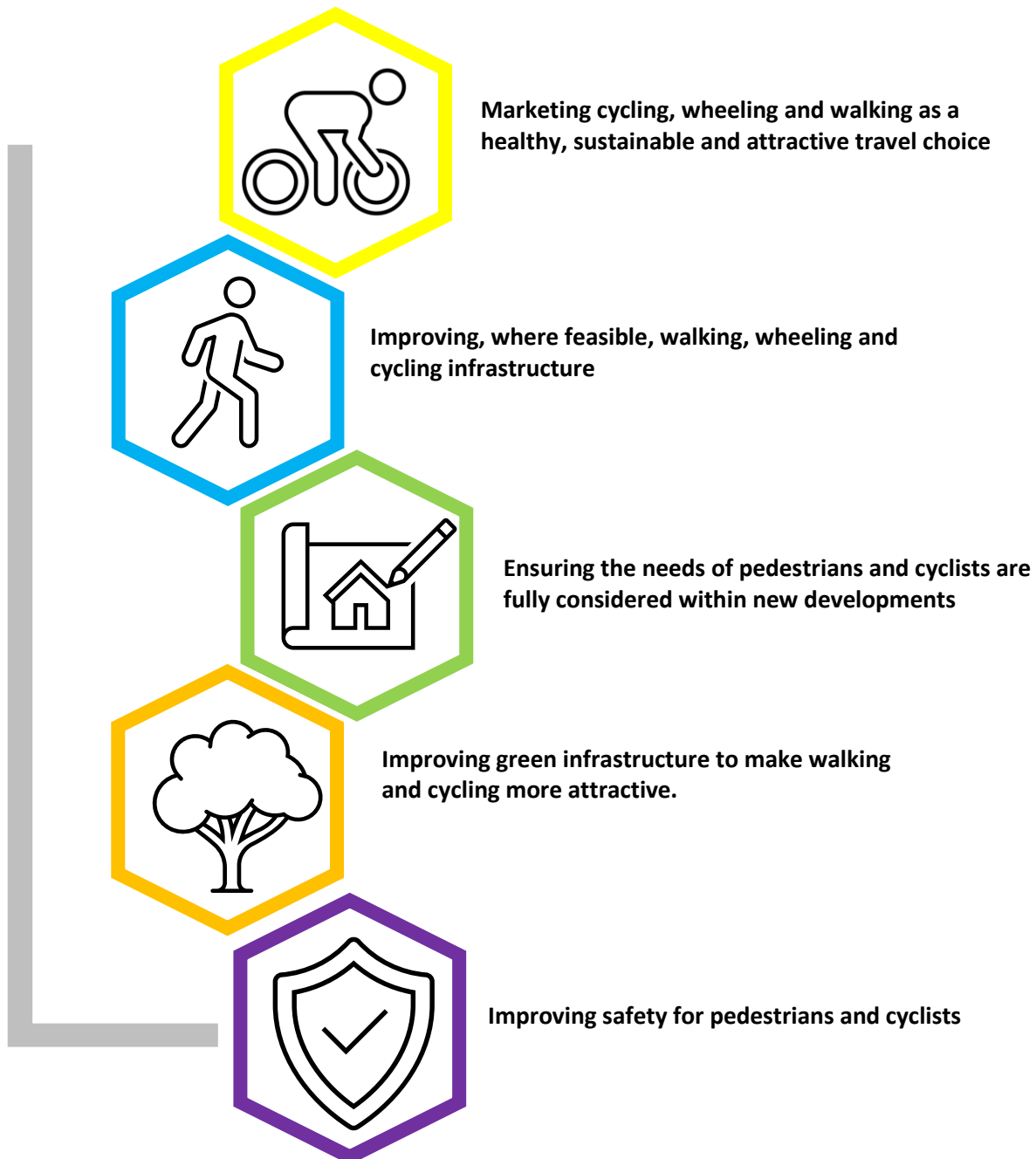
Chapter 2 – Information gathering and baseline analysis

Overarching vision

Local Cycling and Walking Infrastructure Plans (LCWIP's) are a strategic approach to identifying cycling and walking improvements required at a local level. They enable a long term approach to developing networks and routes and form a vital part of the Government's strategy to increase the number of trips made on foot or by cycle. LCWIPs are instrumental in leveraging funding from the Cycle Infrastructure Fund along with other national and local funding streams.

An overarching vision will help to determine how the Bracknell Forest LCWIP can define desirable and achievable outcomes from an active travel and sustainable mobility perspective.

This vision will guide the development, implementation and evolution of this LCWIP and support the UK Government's target that 50% of all journeys will be made on foot or by cycle by 2030 (Gear Change, 2020), and Bracknell Forest's commitment to becoming carbon neutral by 2050.



Climate emergency

The transportation sector is the second largest source of greenhouse gas (GHG) emissions in the UK, behind only the energy supply sector. Decarbonising our transport network is fundamental to ensure the country is working towards its target to be net zero by 2050.

The DfT's Decarbonising Transport (2021) paper states that passenger cars and taxis were responsible for 55 per cent of domestic greenhouse gas emissions in 2019, a share that remains almost unchanged from 1990. The paper also sets out a path to Net Zero, citing a reduction in emissions from domestic transport as essential to meet the UK's net zero targets. One way of achieving this is by facilitating a mode shift away from passenger cars towards **zero emission modes** like walking and cycling for shorter journeys.

Bracknell Forest has been involved in climate change action plans since the Nottingham Declaration on climate change in February 2007. Emissions from all road transport and domestic gas heating alone make up almost 60 per cent of Bracknell Forest's total emissions (BFC Climate Change Strategy, 2021), bookmarking transport as a key industry to target.

The case for walking, wheeling and cycling

A key component of the DfT's transport decarbonisation plan (2021) is ensuring that public transport, cycling and walking is the natural first choice for all who can take it. This strategic priority is to be achieved by delivering a world class cycling and walking network in England by 2040.

Embracing new modes of sustainable transport, such as e-cycles and other emerging technologies will create opportunities to access longer journeys using active transport. LCWIPs are an important component of using the built environment to promote health and wellbeing.

It is particularly important that the 14% of households in Bracknell Forest without access to a car (Census 2011) can access employment and education opportunities, key services and facilities. Delivering improved active travel connections between key destinations will be important in this regard. Reducing social isolation, especially for older people, and increasing levels of community engagement can be supported by active travel as a means for people to interact socially more often.

A Post Covid-19 opportunity

The national lockdowns that resulted from the Covid-19 pandemic caused a temporary reduction in global emissions, with global daily CO₂ dropping by 17 per cent at the peak of the crisis. The closure of public transport networks and workplaces lead to a reduction in urban traffic and many more people embracing walking and cycling as a leisure activity. Continued home working and video conferencing as a result of the pandemic has caused major changes to traditional commuter and business travel patterns which will save thousands of tonnes of carbon. Meanwhile the proliferation of last-mile delivery vehicles on our streets has created a new challenge.

DfT (2019) sees these societal changes as an opportunity to deliver a Covid recovery that is low-carbon. Using innovative technology to cut delivery traffic and focus on harnessing liveable places; communities that are so readily accessible by foot or cycle that it becomes the most preferable transport option.

Bracknell Forest's Climate Change Strategy (2021) recognises the importance of preserving the climate beneficial elements of the pandemic and have included it as one of four principles for reducing carbon emissions.

National Policy Context

Decarbonising Transport (DfT 2021)

Sets out the Government's commitments to reduce carbon emissions through investing in walking and cycling networks with the aim of half of all journeys in towns or cities to be walked or cycled by 2030. This will support their overall vision to achieve a NetZero transportation sector by 2050.

Gear Change: A bold vision for cycling and walking (DfT 2020)

Sets out Government's vision for delivery of far higher quality cycling infrastructure, focusing on segregated cycle routes with local authorities being expected to deliver a step change in the Level of Service for cycling and walking. It establishes "Active Travel England" that will assess local authorities' performance on active travel, with findings influencing the funding authorities receive across all transport modes. The accompanying Local Transport Note 1/20 Cycle Infrastructure Design sets out new ambitious cycle design standards.

Cycling and Walking Investment Strategy 2 (DfT 2022)

Sets the ambition that 50% of all journeys in towns and cities should be walked or cycled by 2030. The strategy sets out how the government intends to target investment in active travel through to 2025. The strategy supports locally targeted investment identified via LCWIPs to connect people with places – creating vibrant, healthier and productive places and communities.

Future of Mobility: Urban Strategy (DfT 2019)

Nine principles to address the challenge of transforming towns and cities to meet current and future transport demands. Includes the principle that 'walking, cycling and active travel must remain the best option for short urban journeys'.

Everybody Active, Every Day (Public Health England 2014)

Indicates how the built and natural environment impact on the travel choices people make and highlights the necessity for effective urban design and transport systems which create 'active environments' to promote walking, cycling and more liveable communities.

Clean Air Strategy (DEFRA 2019)

Outlines how achieving modal shift is key to delivering emissions reduction. LCWIPs have a part to play in tackling the climate emergency by reducing emissions through the delivery of walking and cycling options for journeys.

Inclusive Mobility (DfT 2021)

This document outlines best practice on inclusive design of pedestrian and transport infrastructure. Inclusive design requires that the needs of all disabled people are considered from the outset of any transport and pedestrian infrastructure. LCWIPs identify improvements to build active travel networks and key routes fit for all users

Local Policy context

Bracknell Forest Council Climate Change Strategy (2021)

Supports wider national policy aims to achieve NetZero by 2050. Using four strategic principles, the council plan to work with partners to reduce carbon emissions under the council's control and influence and lead community action against climate change. Preserving the beneficial outcomes of the COVID-19 pandemic, preserving the natural environment and working with schools and young people are key objectives to the strategy which will assist Bracknell Forest's sustainable development.

The Local Transport Plan 3 2011 to 2026 (LTP3) (Bracknell Forest Council, 2011) Sits within Bracknell Forest's wider Sustainable Community Strategy (Bracknell Forest Council, 2011), main objectives include preserving and enhancing Bracknell Forest's green spaces, improving accessibility to public services and the town centre and strengthening the local community's economic and recreational position. LTP3 sets out transport policies for the LTA to focus on until 2026. These include: accessibility, streetscene, improving public transport and taxi services, investing in active transport, public rights of way, parking, road safety and air quality management.

Upcoming: The Local Transport Plan 4 (Bracknell Forest Council)

The upcoming LTP4 document will supersede LTP3, and this LCWIP will be one of a family of documents that underpin LTP4.

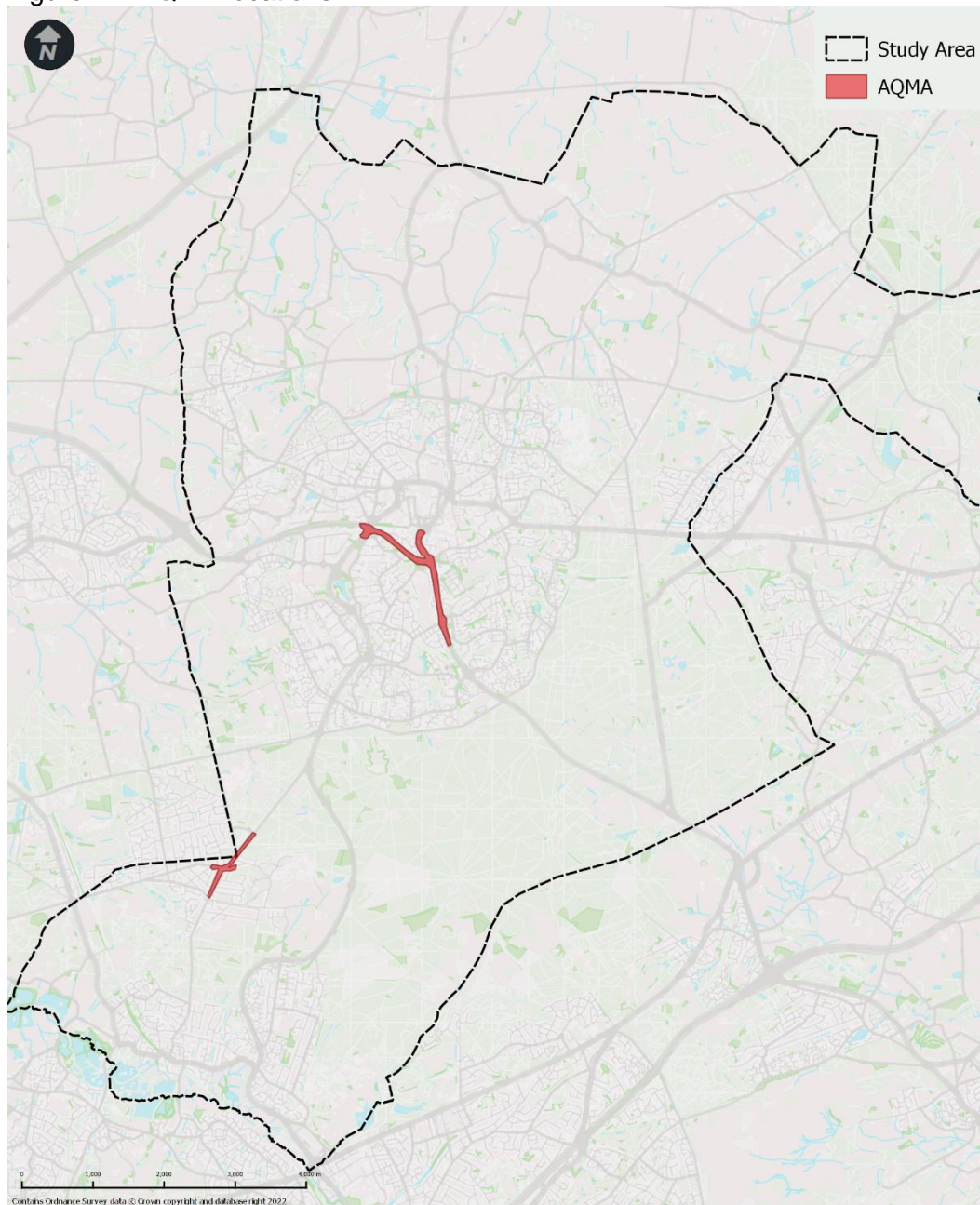
Air Quality Management Areas (AQMAs)

AQMAs are areas identified by local authorities where it is predicted the national air quality objectives will not be achieved. A Local Air Quality Action Plan is then put together with the aim of reducing carbon emissions in these areas. Designing LCWIP routes to incorporate AQMA's will be advantageous to the Bracknell Forest Council's Action Plan as reduced traffic and/or modal shift to active travel will contribute to reducing carbon emissions while improving air quality, public health and overall quality of life.

Two AQMA areas have been declared in Bracknell Forest and are presented below.

Locations	Date Declared	Pollutants
Area 1 The Bagshot Road A322 Horse And Groom Roundabout Downshire Way AQMA	09/02/2011	Nitrogen dioxide NO2
Area 2 The Bracknell Road B3348 And Crowthorne High Street, Crowthorne AQMA	09/02/2011	Nitrogen dioxide NO2

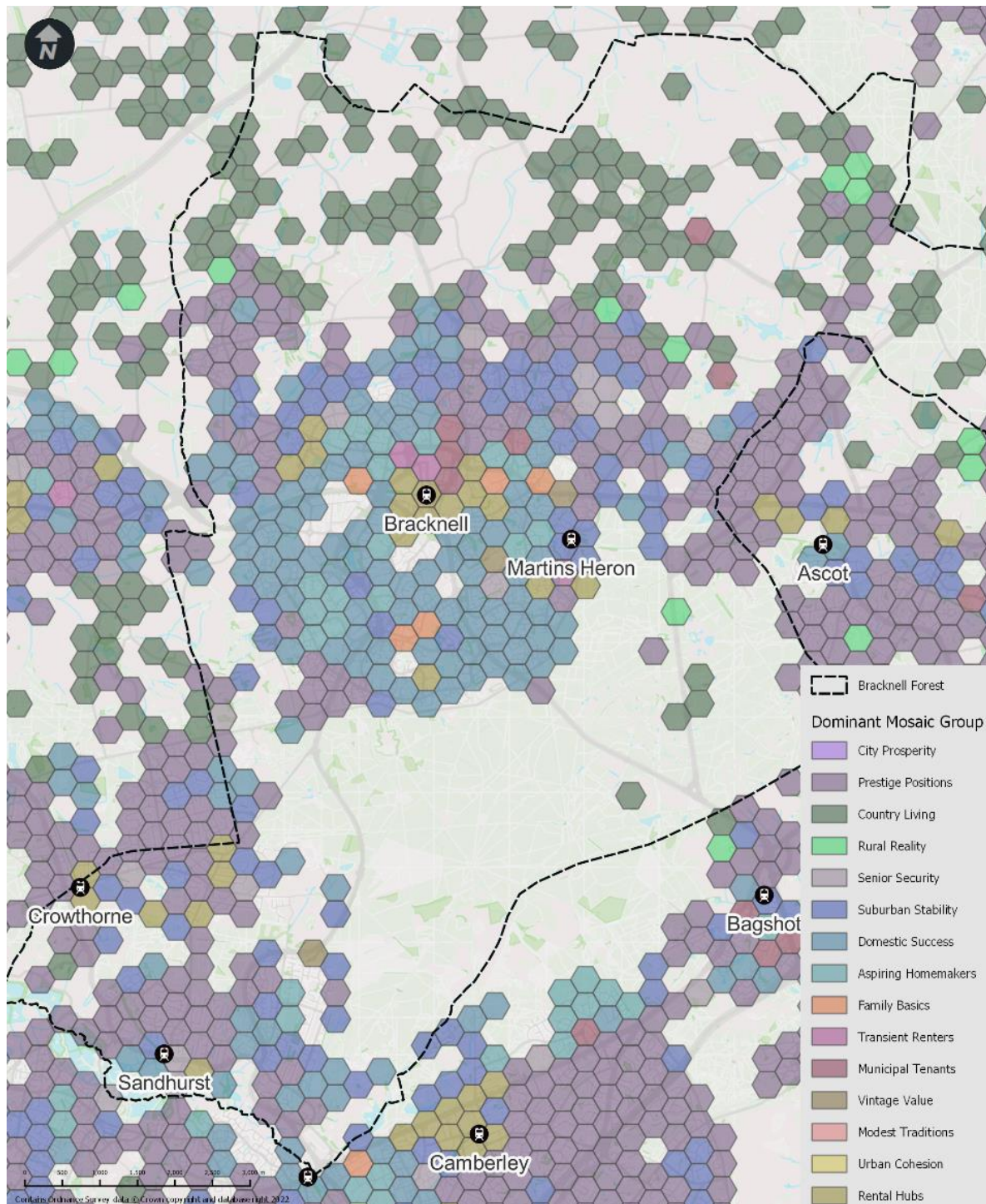
Figure 2 – AQMA locations



Socio-demographics

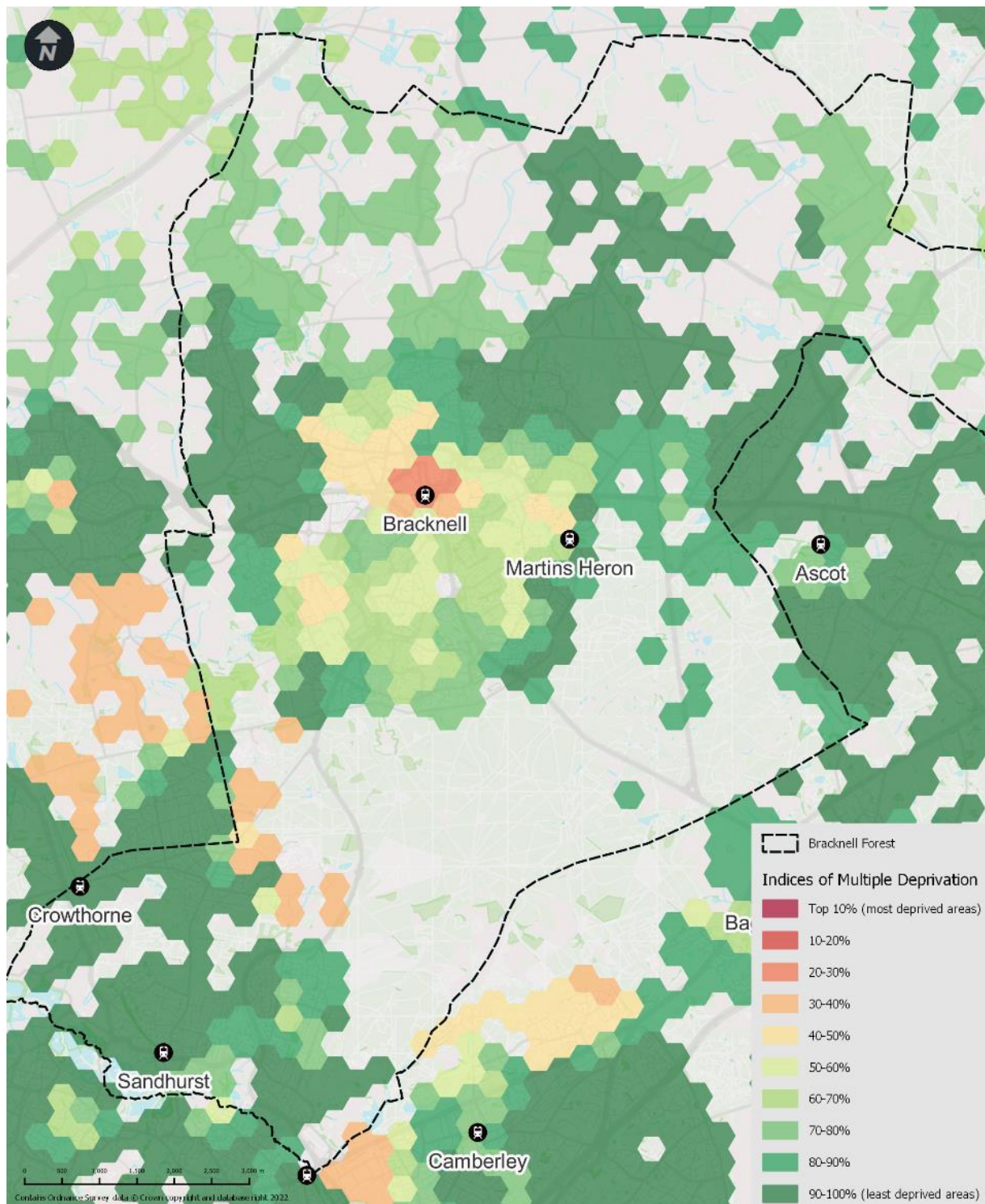
Mosaic Group

This map gives an idea of the demographics and typical lifestyles of residents in Bracknell Forest by segmenting the population into groups with shared characteristics. According to this dataset the town centre is populated mostly by rental hubs/transient renters; young, single people renting shared households, less likely to own a car and would likely benefit from active travel infrastructure provision. Further out towards the suburbs tend to have a above average household income. South towards Sandhurst households typically consist of families living in larger detached homes and higher car ownership.



Indices of deprivation

This map shows that areas closest to the station and in Bracknell town centre and residential areas to the west of the town centre have higher indices of deprivation. Areas ranking 20-30% are also in the rental hubs category of the mosaic map. Combining the IMD with this suggests that the younger households living here are less likely to own a car and so would benefit from active transport infrastructure.



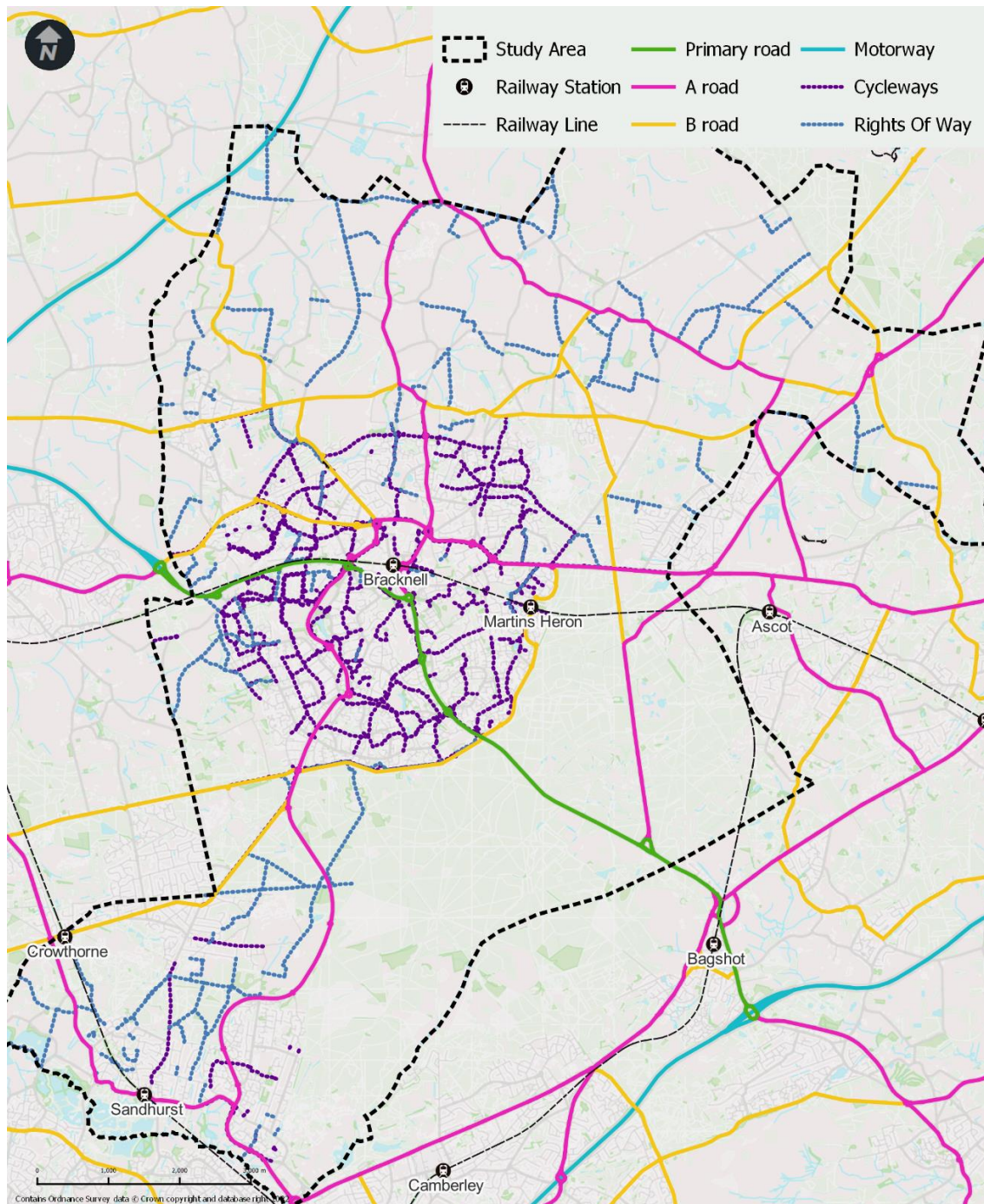
Review of existing conditions

Existing infrastructure

Figure 5 shows Bracknell Forest's existing main transport connections. One primary road and three A roads traverse Bracknell town centre.

In terms of active travel infrastructure, there is a small network of cycleways which focus more on the residential areas on the periphery of the town centre. Some of these routes overlap with Public Rights of Way as shared use paths, however these do not all comply with LTN 1/20 design principles. They are not all holistic or visible in some areas and shared use paths are not always the most appropriate provision.

Figure 5 – Existing conditions



Severance issues

Although there are generally sufficient pedestrian footpaths in Bracknell there are a number of severance issues. The current walking network is broken up by stairs to underpasses in parts creating a barrier for some users. The railway line acts as a barrier and increases the journey time on some north-south walking routes. The current cycle provision is both below standard and not joined up meaning cyclists have to pass over the busy road network which presents a lack of directness, coherence and safety risks.

The A roads and primary roads create severance for active travel users, particularly at crossing points. Introducing new sparrow or parallel crossings will ensure there is a safe segregated crossing space.

Although the underpasses reduce severance they also have safety disadvantages; including perception of safety and accessibility restrictions for people with disabilities or pushing prams etc. Opportunities exist to improve the underpass infrastructure as part of this LCWIP as well as options for new crossing facilities.

Perception of safety

Safety and the perception of safety is one of the key reasons along with ability why people do not cycle. There is a strong consensus that cycling under mixed traffic conditions presents a high personal risk to safety. Segregated cycle infrastructure helps to break down these barriers by providing separation from other road users on both links and junctions.

During the pandemic, cycling rates increased by 46 percent and a million more people started walking for leisure. With quieter roads came increased confidence to cycle. Building on this success, emergency pop up cycleways were rolled out in areas across the UK to safely accommodate active travel users, and provide a greater perception of safety compared to mixing with motor traffic. The LCWIP provides an opportunity to build on this momentum.

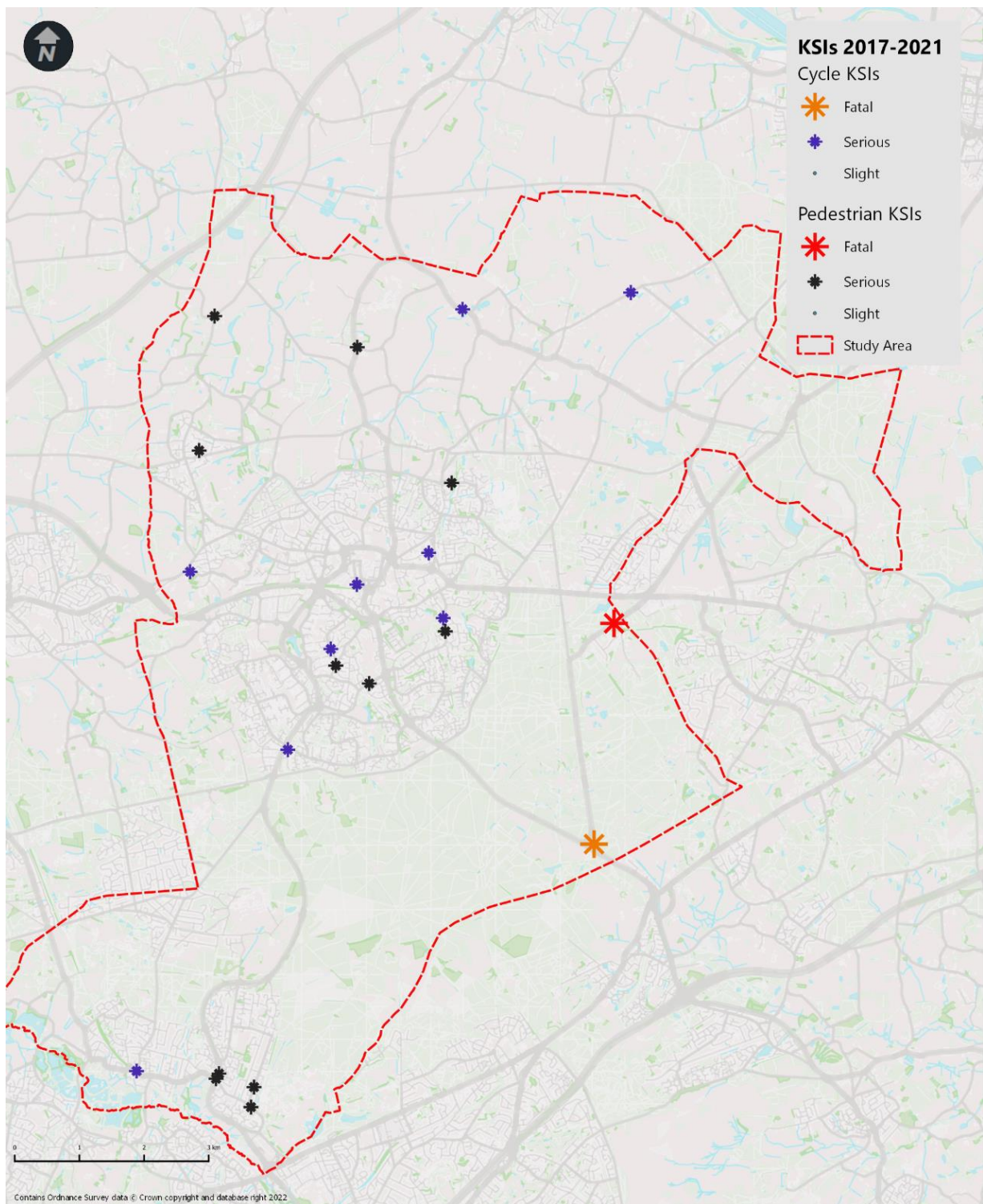
Collision data

Figure 6 maps pedestrian and cycle KSIs in Bracknell Forest in the 5 years between 2017 and 2021. Over this period there were 11 serious pedestrian collisions, 1 fatal pedestrian collision, and 9 serious cycle collisions with 1 fatal cycle collision.

Pedestrian and cycle KSI collisions are generally dispersed around the borough, with a small cluster of serious pedestrian collisions around Sandhurst. Both fatal collisions occurred on high speed roads without pedestrian or cycle facilities.

Protecting pedestrians and cyclists from motor traffic movements through safe crossings, junction upgrades and protected facilities forms a key part of this LCWIP, contributing to road danger reduction. Collision data has also formed part of our appraisal of the active travel routes identified, with routes with high levels of KSIs prioritised.

Figure 6 – Collision data



Stakeholder engagement

Commonplace consultation

To understand issues with the existing walking and cycling network and opportunities for improvements, a Commonplace engagement was held from the 1st- 28th February 2022. Council stakeholders, including Elected Members, and local people and interest groups could navigate through the interactive map and leave comments directly at locations they feel could be improved. Visitors could also 'Like' comments they agreed with.

The consultation attracted:

- 2,791 Visitors
- 2,653 Contributions
- 1,809 were agreements
- 842 comments

The maps below show that respondents were spread across the borough with issues and opportunities identified in all areas.

Figure 7 – respondent postcodes

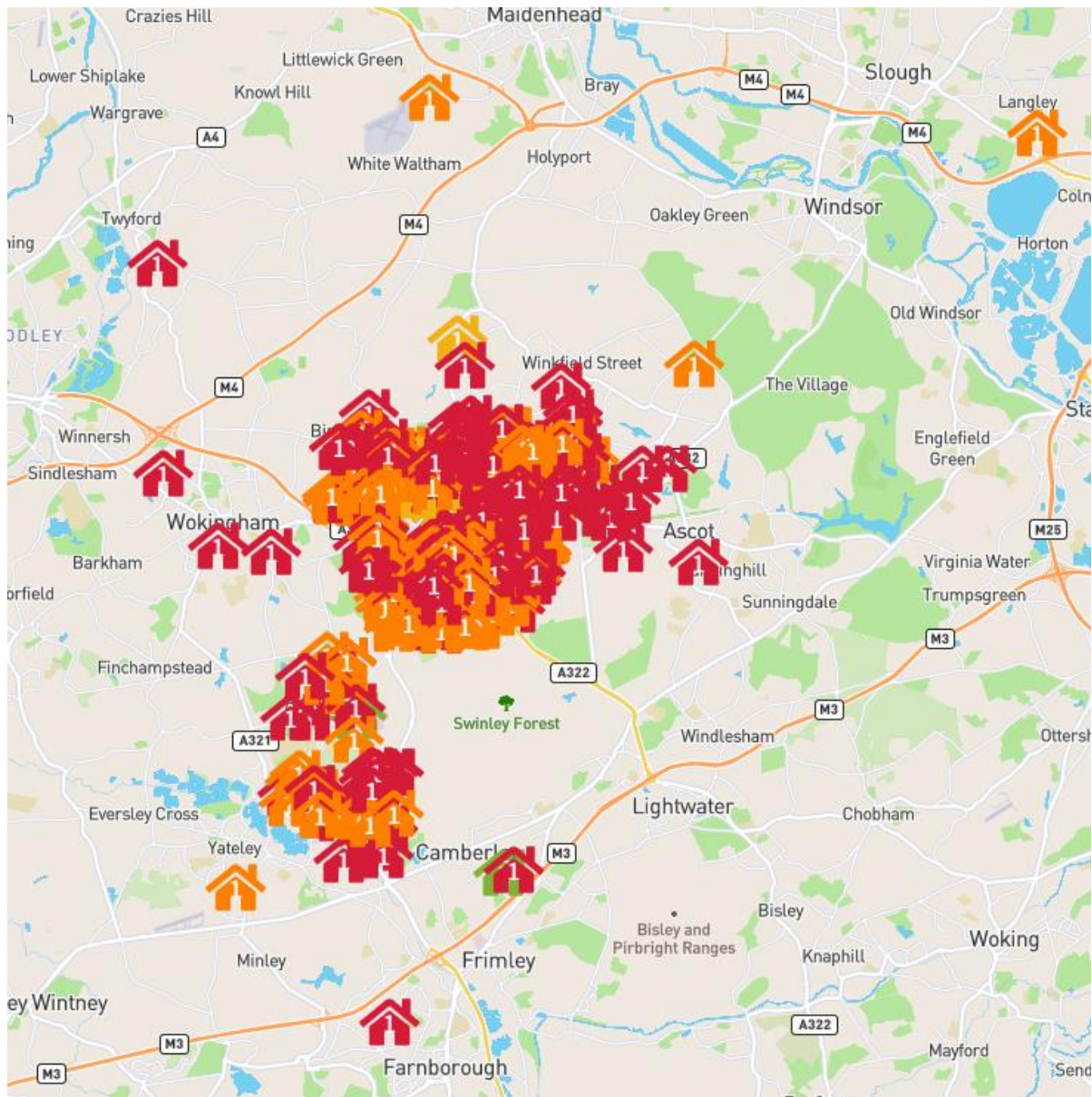
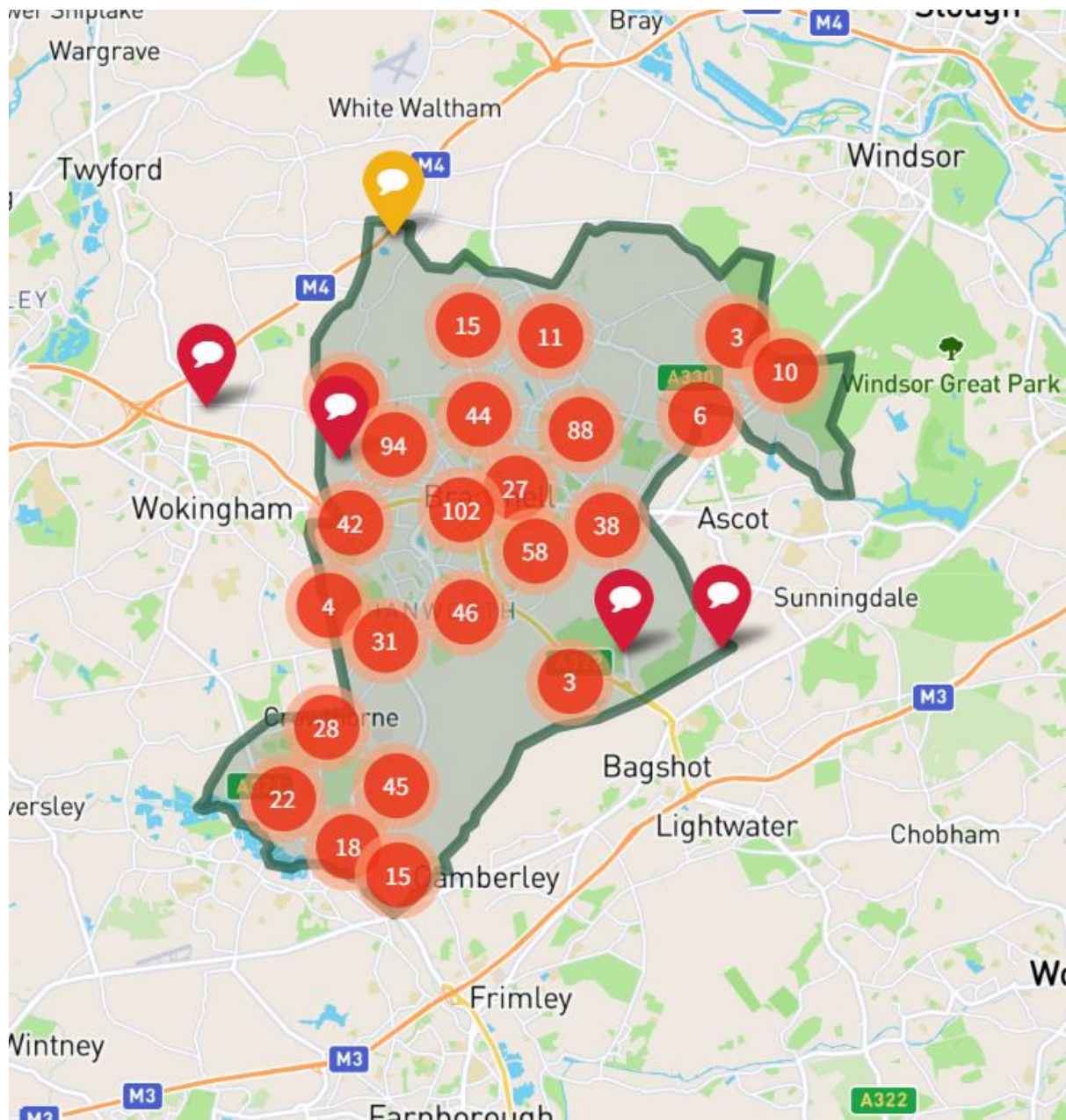


Figure 8 – spatial distribution of Commonplace responses



Key issues from the consultation

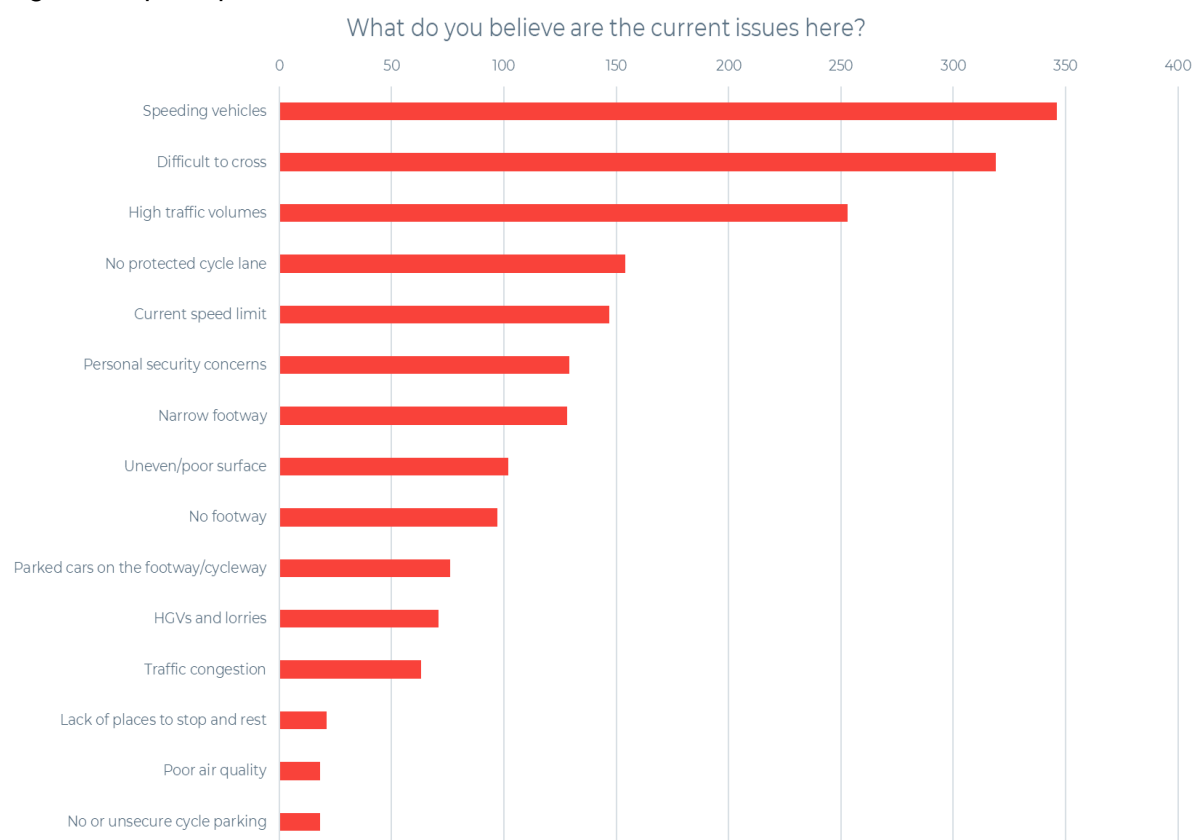
The Commonplace engagement highlighted several key issues which prevent people from walking or cycling in the proposed area. Speeding vehicles was the largest issue highlighted with around 345 of the 525 confirmed respondents citing speeding as an issue.

Difficulty crossing and high traffic volumes were the second and third highest issues for local people. Implementing traffic calming measures is therefore a major improvement that should be looked into.

Further issues preventing cycling included not having a protected cycle lane and congestion. Focusing on implementing segregated cycleways where we can is another improvement that could increase levels of cycling.

Personal security concerns and narrow footways were expressed as being off-putting factors for pedestrians, particularly women. Developing walkways by improving streetlighting and surveillance and widening footpaths would improve the feeling of safety for all users.

Figure 9 – perception of current issues



Speeding vehicle and crossing difficulty hotspots

The comments provided allowed for a cluster analysis to be undertaken, which led to the identification of groupings of comments in similar or the same locations. These maps show the locations contributors felt concern about speeding vehicles and had difficulty crossing roads. Interestingly, the locations perceived as being hotspots for speeding correspond with locations that are difficult to cross. For both issues, there seems to be the highest cause for concern around Temple Way and Wood Lane to the north west of the town centre.

This engagement has highlighted people have safety concerns in this area due to a combination of high speeds and lack of infrastructure to support new development and the proximity of schools; increasing the potential for accidents. There is also only one narrow shared footway and cycleway on one side along the majority of the road raising safety concerns.

The heatmaps have been a useful tool for establishing the areas in which the local community identifies improvements are needed. This will help to prevent any local backlash against the proposals.

Figure 10 – speeding vehicle hotspots

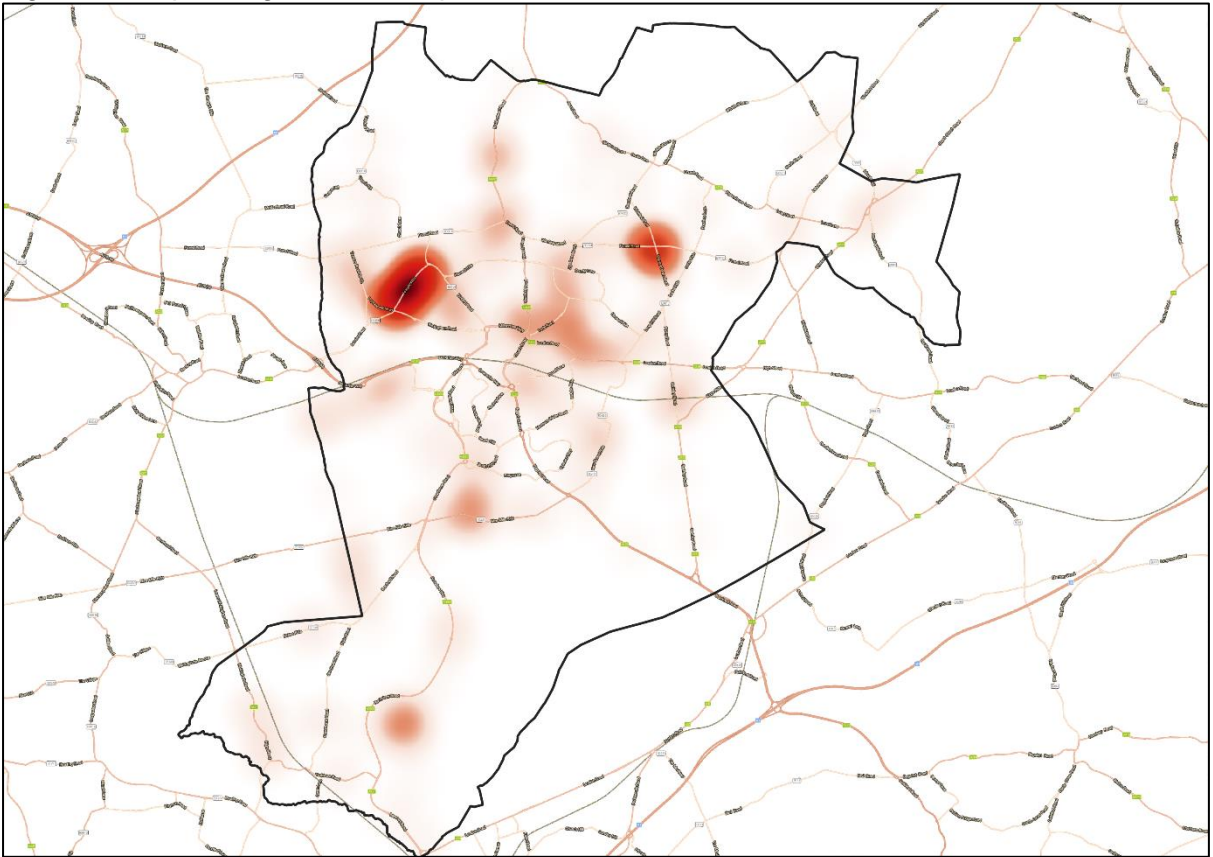
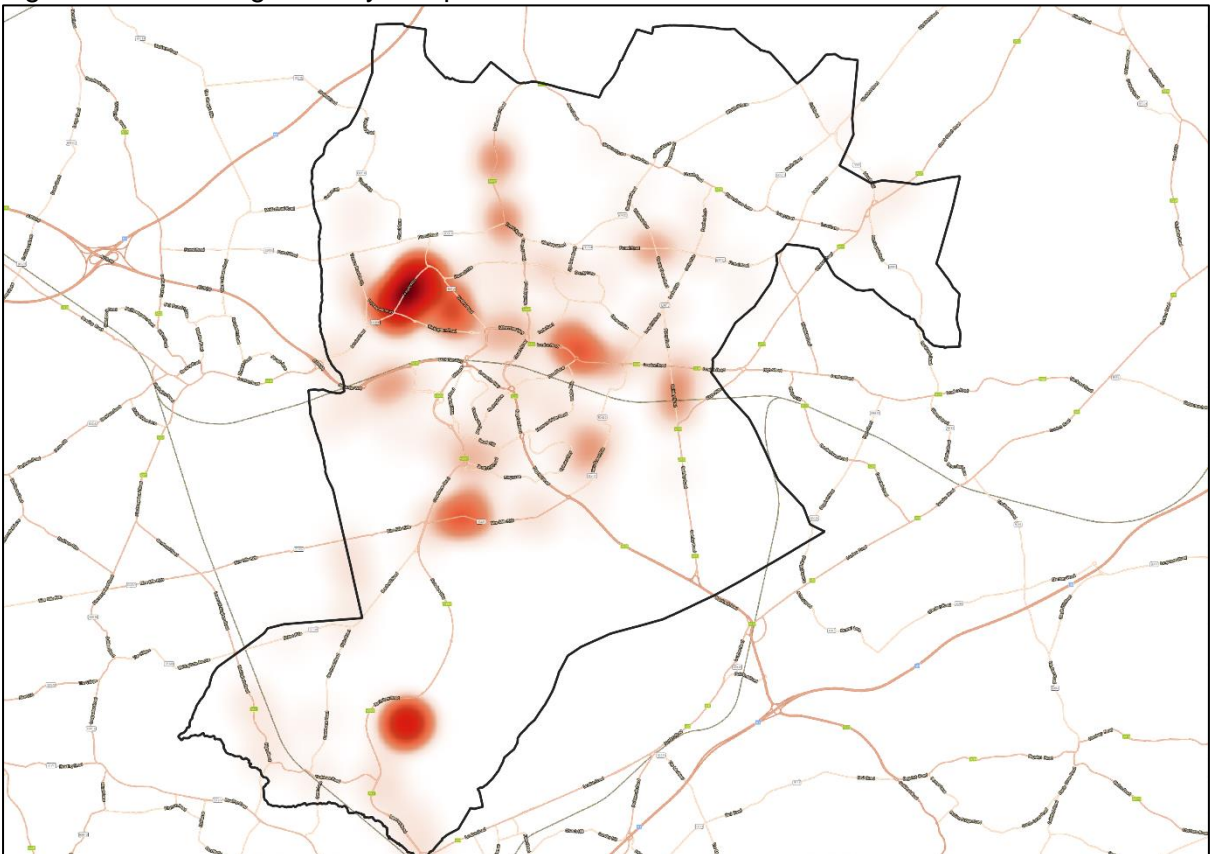


Figure 11 – crossing difficulty hotspots



Summary

The information collected as part of this stage of the LCWIP is referenced throughout the document, as it informs the extent of the network, interventions and the prioritisation of schemes.

Key findings from the information gathering are highlighted below:

POLICY REVIEW

- > National and local policy closely aligns with Bracknell Forest's ambition to create a high quality walking and cycling network.
- > Latest government guidance on infrastructure design was applied

DEMOGRAPHIC DATA

- > This data was used to shape the network and target interventions at areas with a greater propensity to cycle, and where cycle infrastructure could play a role in reducing inequalities.

EXISTING NETWORK

- > The extent of the existing network was used to ensure that any proposed interventions provided good connections to this network, and opportunities to fill gaps were seized.

COLLISIONS

- > Routes with high numbers of KSIs were prioritised to support road danger reduction.

STAKEHOLDER ENGAGEMENT

- > Through engagement we were able to identify areas where residents felt there were issues that walking and cycling infrastructure could address. This informed the shape of the network and the prioritisation of routes.

Chapter 3 – Network Planning

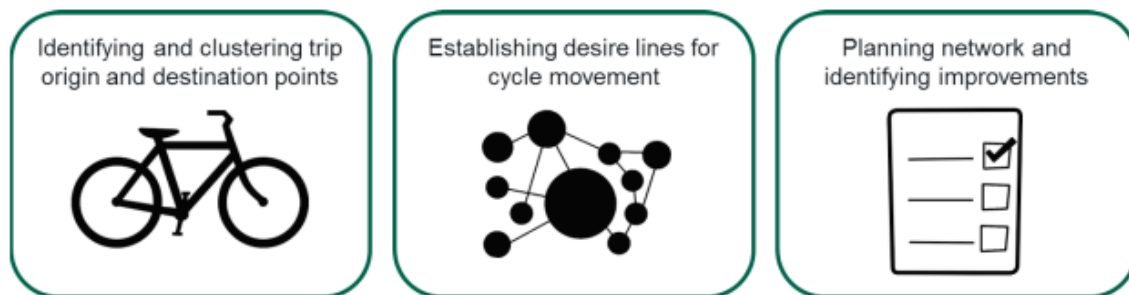
Process for network planning for cycling

This section details how the steps undertaken in Chapter 2 have been used to develop a draft cycling network for Bracknell Forest.

The stakeholder engagement helped to determine key areas where LCWIP development can be used to resolve high carbon emissions and other social problems including road safety and personal security.

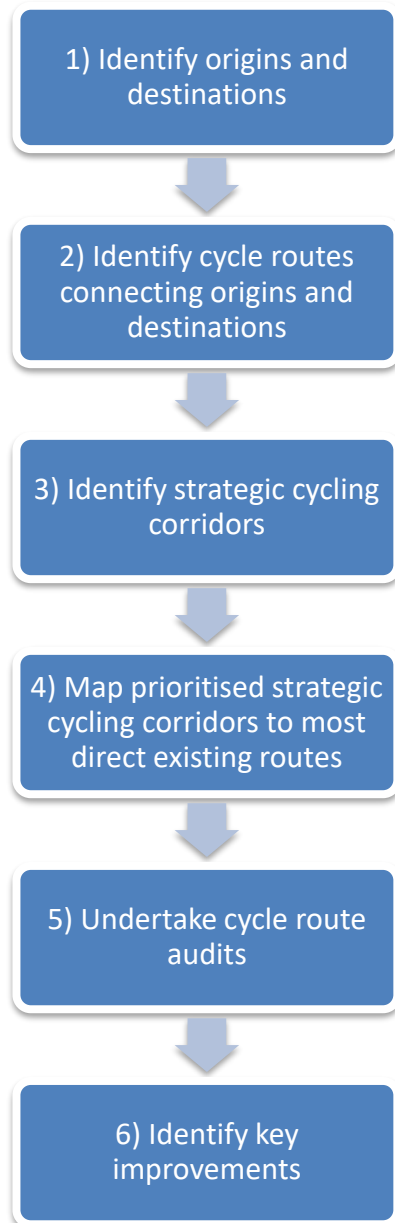
A key goal in this stage of the LCWIP was to determine where the greatest propensity for cycling exists – where targeted investment in infrastructure could generate the greatest number of new cycling journeys.

The process for planning the cycling network is identified in the image below. The Propensity to Cycle tool has assisted in identifying desire lines for cycle traffic for trips to help inform network development, while the GIS LCWIP Model has analysed origin and destination data relevant to Bracknell Forest.



Stages for planning cycle routes

The flow diagram below shows the six stages to planning a cycling network according to the DfT Technical Guidance for LCWIP design. Each of these stages were undertaken throughout this LCWIP development process.



Origin-Destination analysis

Current and future origins and destinations

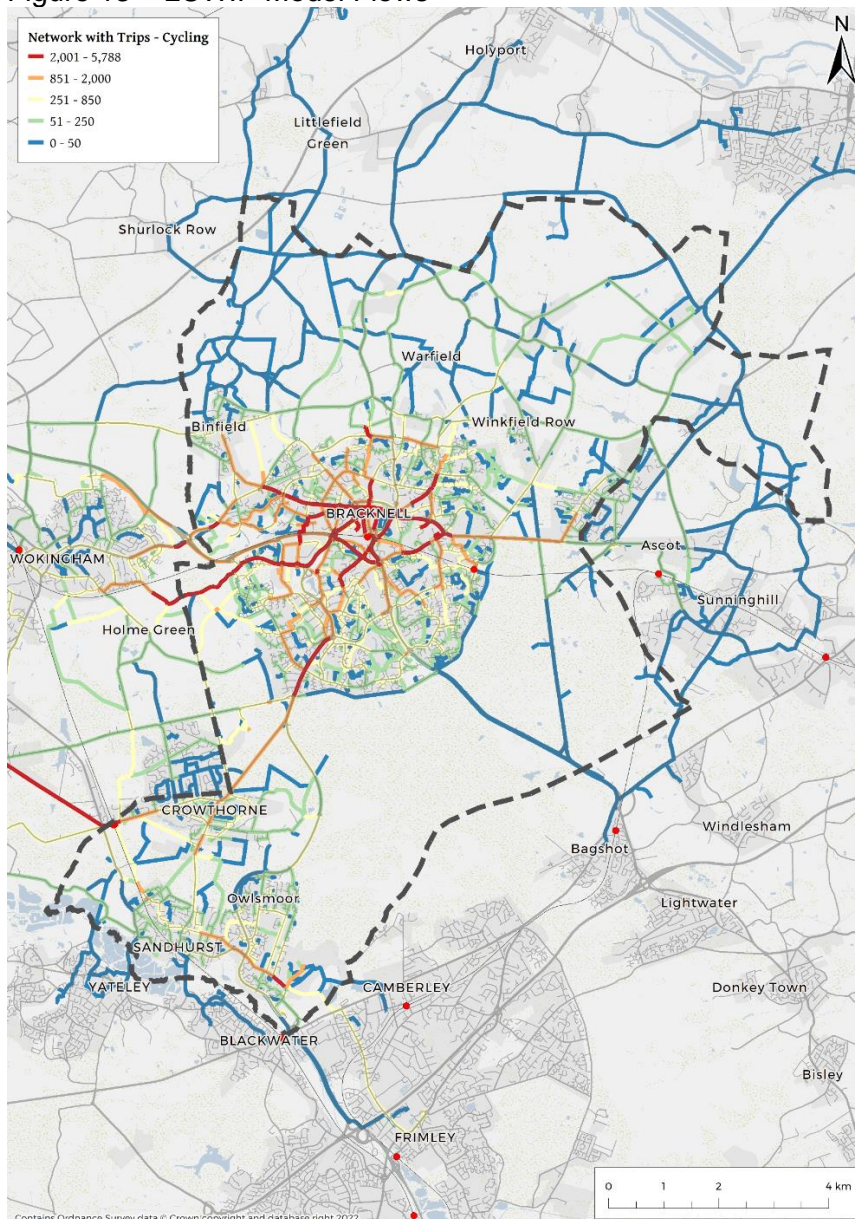
The LCWIP Technical Guidance notes that identifying demand for a planned cycle network should start by mapping the main origin and destination points.

In line with the guidance, census output areas were chosen to represent journey origins from existing residential areas. Additional origins and destinations were identified as:

- > Future housing and employment sites adopted in the Local Plan
- > Core tourism areas and attractions
- > Town, District, and Neighbourhood Centres as identified in the Local Plan
- > Current and proposed rail stations
- > Hospitals and secondary schools

Cross-boundary journeys to/from outside of Bracknell Forest were also considered. We have discussed cross boundary route development with Wokingham Borough Council and have analysed connections with Maidenhead's cycle network alongside this.

Figure 13 – LCWIP Model Flows



Potential Cycle Network

WSP has built a GIS model for informing LCWIPs, which is customisable depending on local assumptions applied. This model compensates for the limitations in the PCT by allowing the latest origin and destination data to be input and applied to a custom network. This gives us an indication of potential demand for cycle and walk trips beyond the commute and the school run, and also takes into account potential demand from housing built since 2011 and housing planned from the future.

In brief, this model has looked at how many people live in the area, employment centres and future developments and calculated the potential amount of cyclists travelling between these origin and destination points. This gives an indication of where on the network there may be suppressed travel demand for walking and cycling trips, and/or potential future demand.

The town centre has high cycle potential with between 2,001 and 5,788 journeys shown. The A329 and Park Road are key potential cycle routes into the town centre from the east and Peacock Lane and Mill Lane could support the majority of cycle journeys from the west, with between 851 and 2,000 cycle journeys per day potentially travelling along Peacock Lane into Bracknell Forest from Wokingham.

Propensity to Cycle Tool

The Propensity to Cycle Tool (PCT) was developed on behalf of the DfT between 2016-2019. It is a web-based tool designed to help authorities plan cycle networks, with LCWIPs in mind.

The PCT helps identify desire lines for cycle traffic for trips to work and to schools. It can also help inform network development, as its outputs can be configured to be applied to the existing network, giving 'heat maps' of indicative demand.

It is based on data from the 2011 Census, which is then manipulated and uplifted to represent a number of future scenarios, showing potential cycle demand patterns. The "Go Dutch" scenario was modelled here. This looks at the distances between homes and workplaces and applies Dutch willingness to cycle to these, imagining how many additional trips could be cycled if there was Dutch-style cycle infrastructure in the UK and Dutch levels of willingness to cycle.

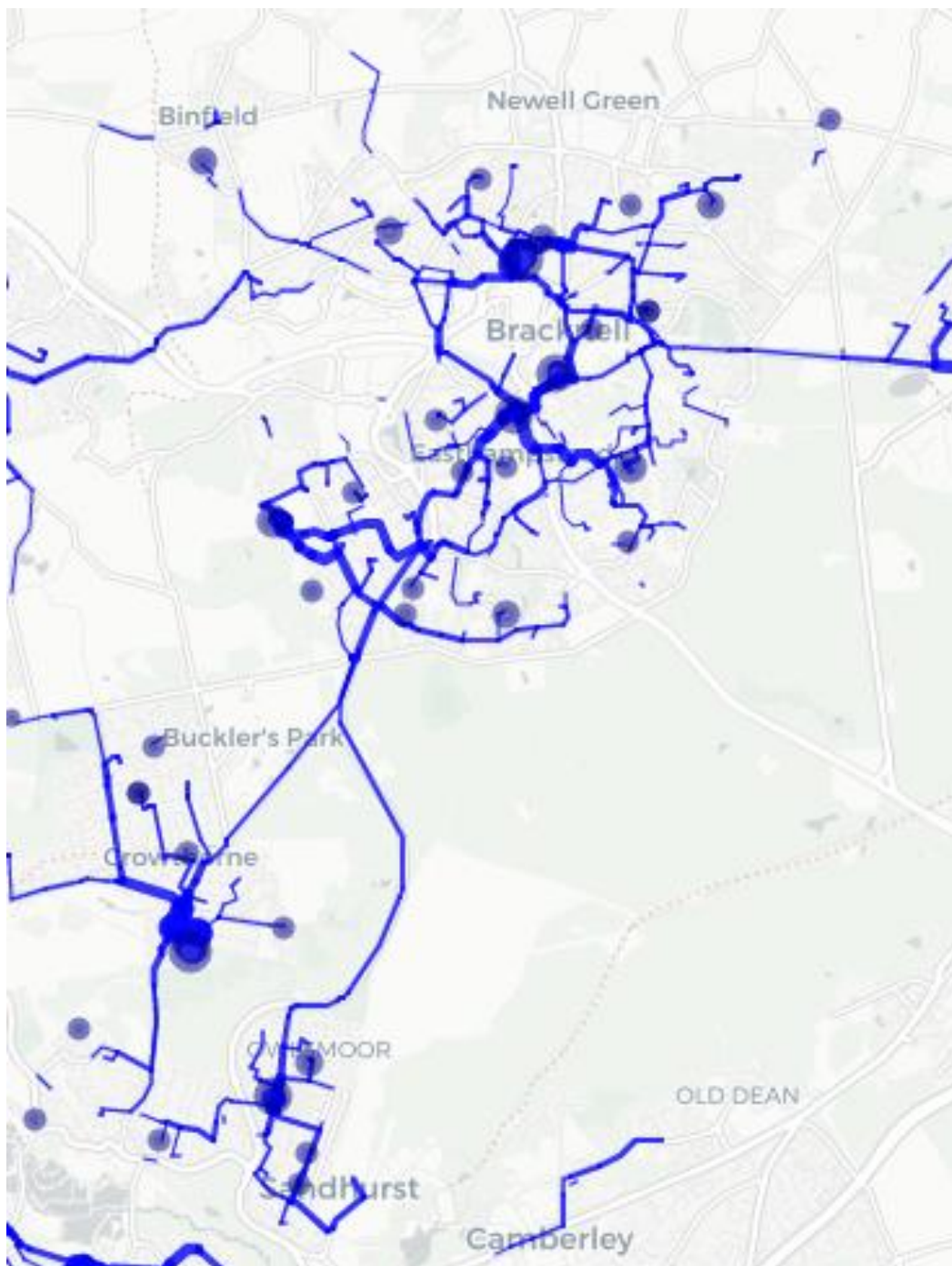
PCT – school trips analysis

The PCT output was overlayed on the location of schools in the Bracknell Forest region (shown in blue dots). Under the 'Go Dutch' scenario, this map shows high potential for a joined up cycle network that will support cycling to the majority of schools in the area. Journeys could also be facilitated between Bracknell and surrounding towns including Sandhurst and Owlsmoor.

The thicker lines show areas with the highest propensity for cycling. The majority of these are within the more residential and urban parts of Bracknell and along Waterloo and Sandhurst Road in Crowthorne, which is in close proximity to Wellington College.

The map shows that the LCWIP has strong potential to encourage a modal shift to cycling and provide beneficial impacts to the health and wellbeing of children by cycling to school. Few schools are not reachable by PCT networks, however they are all nearby potential cycling corridors meaning there will be potential for future expansion of these routes.

Figure 15 – PCT flows and school trips



Route development process

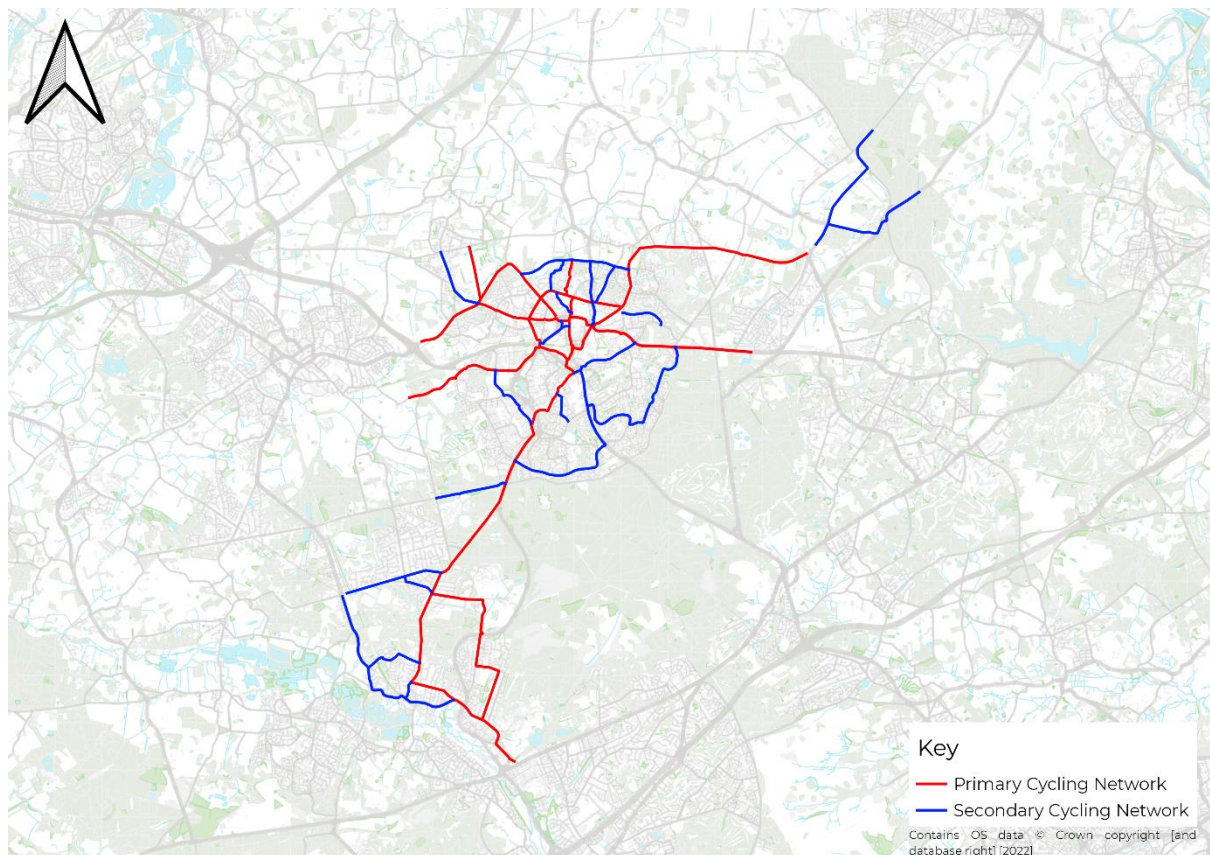
Having determined areas where demand is likely highest the next phase of the process is to identify real world routes that can accommodate these desire lines. For example, via existing roads or paths, or identifying opportunities to create new routes.

The importance of each link and route needs to be understood in terms of their overall significance in the network – this will largely relate to the numbers of cyclists that each will cater for in the future.

The following hierarchy was therefore applied to the links in the network:

- > Primary routes are generally those which align with the agreed desire lines, and are therefore most likely to cater for the highest level of existing and forecast flows.
- > Secondary routes are those with lower expected flows of cyclists, generally those links that connect to specific attractors such as schools, colleges and employment sites, or which add to the density and the connectivity of the overall network;

Figure 16 – Primary and secondary cycling network



Additional cycling and walking routes

The accepted process for developing the cycling and walking network as part of an LCWIP is as described in this document. However, there are some limitations to this approach. The Propensity to Cycle Tool for example relies on mode of travel to work data from the 2011 census which is now out of date. Other formulae and algorithms developed to assist with forecasting walking and cycling flows between origins and destinations can also overlook local conditions and requests from residents.

Bracknell Forest is also unusual in that it already has a developed network of cycle routes. While some of these routes include full segregation between pedestrians, cyclists and motor vehicles, many provide a shared path for those walking and cycling. The extent of this cycle network is such that many residents want to see it extended to cover as much of the borough as possible.

A gap analysis of the current cycle network has been undertaken to identify any obvious missing links. A list of additional infrastructure was included in Local Transport Plan 3. Over time many of these schemes have been delivered by the council's Highway Engineers funded by the annual Capital Programme, but some schemes still await funding.

In addition, new development in the borough can also influence demand for new or improved walking and cycling links. While many of these are delivered directly as part of the development, or using funding secured from the developer in planning agreements, some additional infrastructure requires Council provision.

So in addition to the network identified by the LCWIP process, the following table and map show the additional routes the Council is seeking to deliver, when funding allows.

Route Reference	Route description	Type of scheme	Justification
BFC1	Longhill Road / Chavey Down	Traffic management	To connect the Carnation Drives estate to the wider cycle network
BFC2	South Road / Owlsmoor Road	Path improvement and traffic management	To connect the communities of Crowthorne and Owlsmoor
BFC3	Yeovil Road / Branksome Hill Road / College Road	Traffic management	To link from Owlsmoor to The Meadows
BFC4	Crowthorne Road (Sandhurst)	Shared walking/cycling path	To provide a cycle link to Sandhurst rail station
BFC5	Nine Mile Ride (Golden Retriever junction to Coral Reef)	Conversion of footpath to allow cycling	To connect the Bucklers Park development to The Look Out and Coral Reef
BFC6	Ringmead (Quintilis to Inchwood)	Shared walking/cycling path	Provides cycle route connecting schools, leisure and shopping destinations
BFC7	Ringmead (Oakengates to Vandyke)	Shared walking/cycling path	Provides cycle route connecting schools, leisure and shopping destinations
BFC8	Woodenhill	Shared walking/cycling path	Missing link for wider cycle network connectivity
BFC9	Deepfield Road	Traffic management	Missing link for wider cycle network connectivity

Process for network planning for walking

Similarly to the cycling network plans, the information gathered in Chapter 2 was used to develop a draft network plan for walking, with core walking zones and key walking routes. The draft network was presented to stakeholders, amended and then used to determine the relative importance of different routes and thus which routes to audit and develop infrastructure plans for.

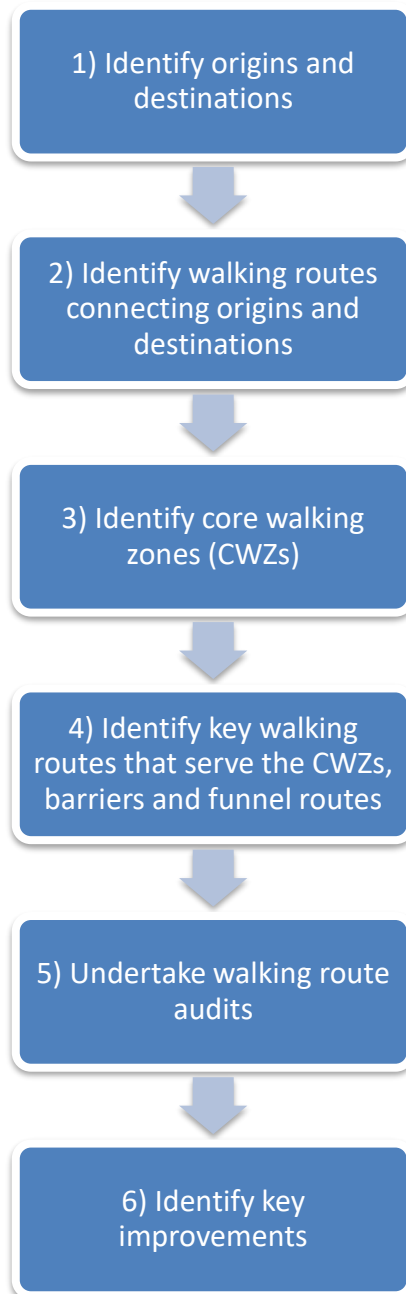
A key goal in this stage of the LCWIP was to determine where the greatest propensity for walking exists – where targeted investment in infrastructure can generate more journeys on foot.

The methodology for developing the network plan for walking is shown below.



Stages for planning walking routes

The following section maps the journey taken to develop our proposed walking routes. Various models have assisted our design for Bracknell Forest's LCWIP. These have been mapped alongside the Commonplace consultation reports so that we can ensure infrastructure is developed where the community need it most.



Potential walking network

Following the methodology outlined within Network Planning for Cycling, the GIS model was also used to identify potential key walking route locations.

Figure 17 shows roads within Bracknell Forest's CWZ's that have the highest potential to be walking routes. It is acknowledged that not every road or path on the network will be walkable (as some roads don't have footways etc.). For the purposes of modelling this is okay as the model's purpose is to identify potential demand, which includes suppressed demand due to lack of facilities. Where footways aren't present, this will likely be identified during the audit stage in any case.

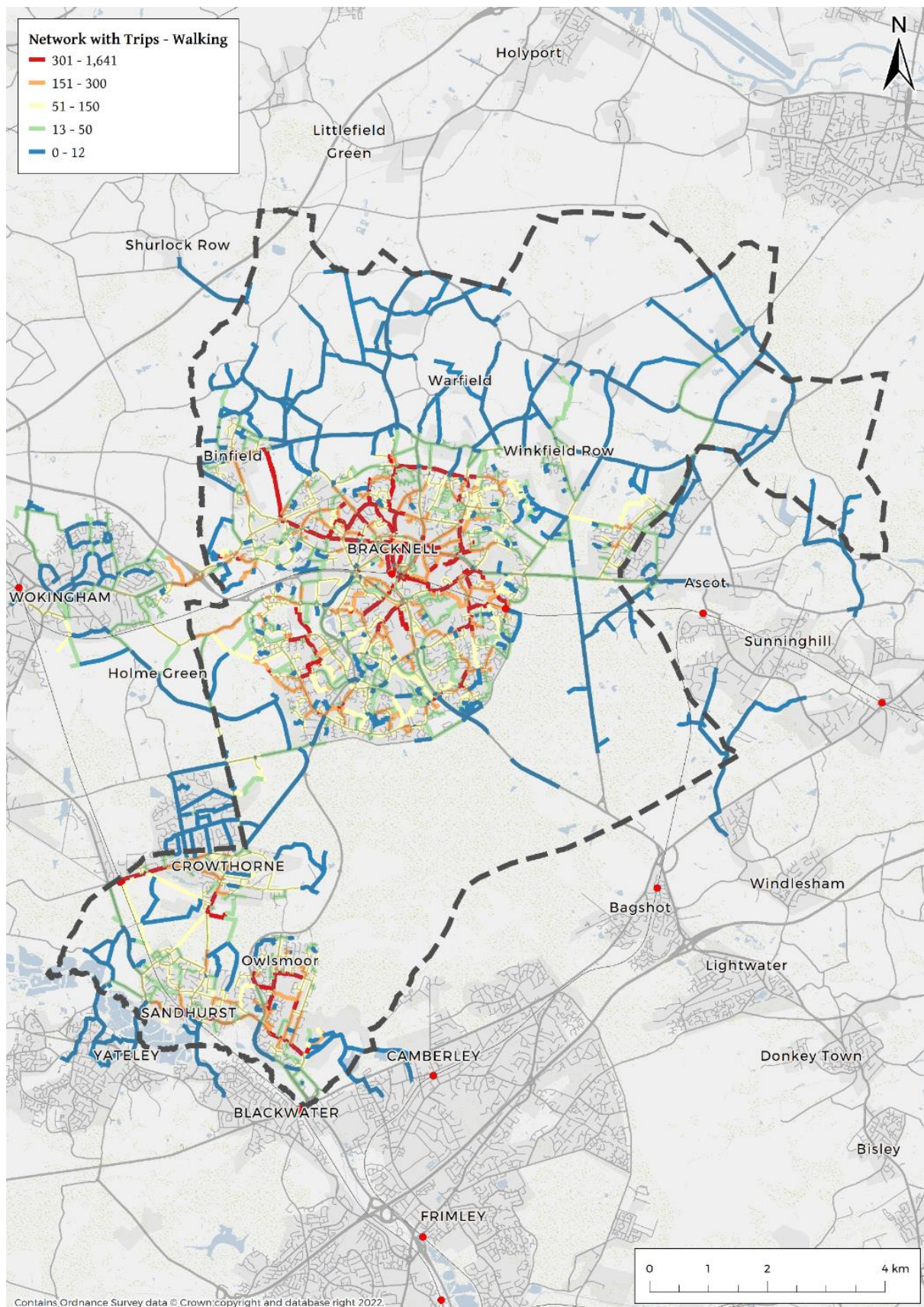
The model highlights some key areas with high walking potential. This includes Wood Lane, connecting Binfield, a key origin point, to Bracknell. This road is also currently surrounded by green space presenting a pleasant route for walking.

Other roads with high walking potential include Millennium Way to the North of the town centre and Market Street, which cuts through the town centre.

Routes marked in blue, have low potential for walking as there are few origin and destination points in these locations. As such these routes will not be prioritised in the proposed plans because they will not support additional pedestrian journeys.

We are also consulting with Wokingham Borough Council to integrate walking routes between the two boroughs.

Figure 17 – GIS Model, highest potential walking routes



Identifying core walking zones

Core Walking Zones (CWZs) are defined in the LCWIP guidance as:

“Areas consisting of a number of walking trip generators that are located close together- such as a town centre or business park.”

It states that within CWZs, all of the pedestrian infrastructure should be deemed to be important, i.e. the pedestrian infrastructure within CWZs (and connections to surrounding areas) should be of a high standard to support and encourage more walking trips.

An illustrative representation of a Core Walking Zones is shown below. This diagram shows the typical characteristics of a CWZ, which includes a minimum diameter of 400m (~5 min walk), and key walking routes radiating up to 2km radius from the CWZs.

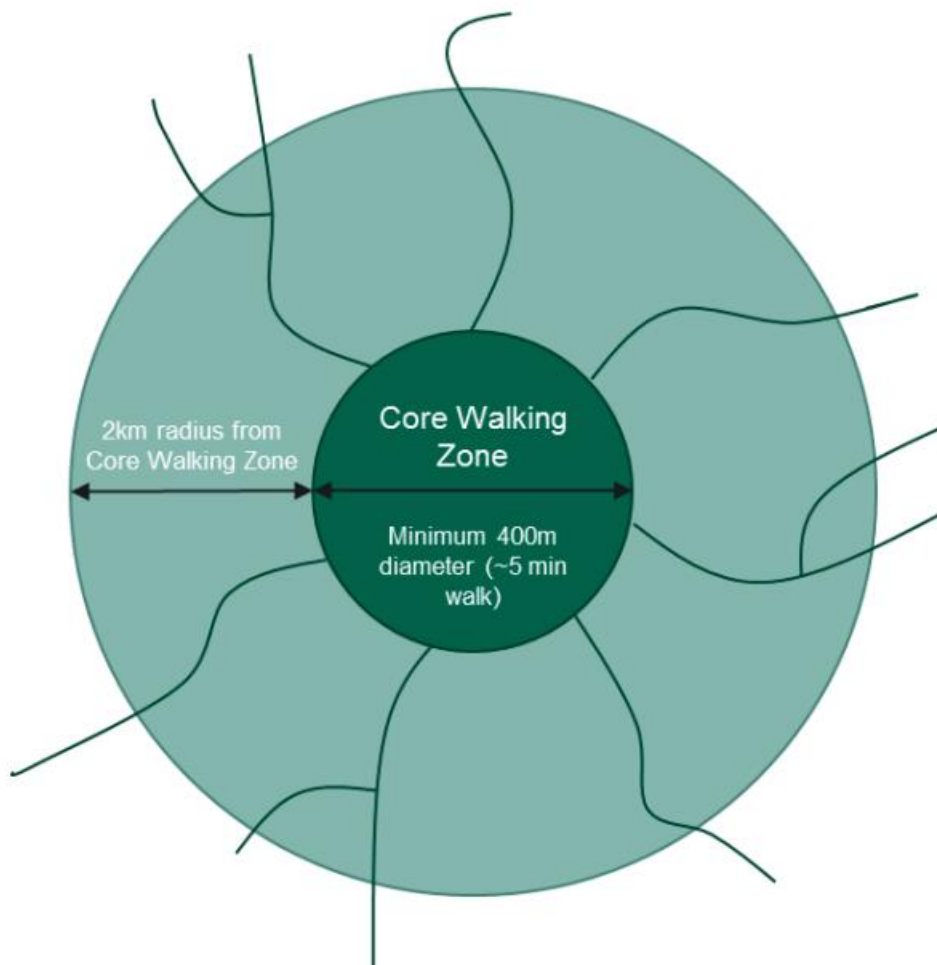
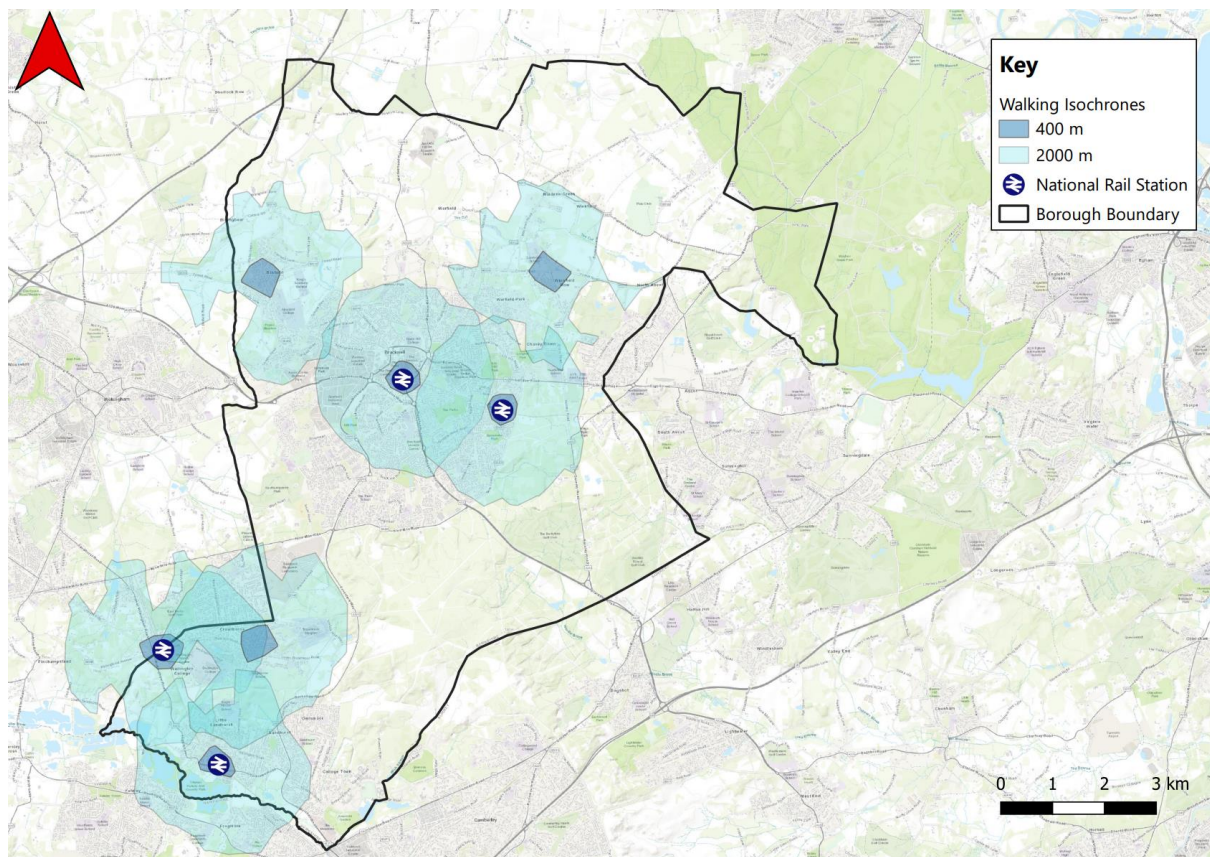


Figure 18 – core walking isochrones



Key walking routes

The CWZs represent the focal points for pedestrian journeys within Bracknell Forest, and therefore the starting point for mapping walking routes is to identify those that serve these CWZs.

For this first iteration of the LCWIP, Walking Routes were considered those main pedestrian routes within CWZs as well as routes connecting to the CWZ (up to 2km in length). Public Rights of Way (e.g. through local areas and connecting to primary routes) were added to increase the coverage in and between urban areas. They were also added within each of the key villages as identified in the scoping report. As recommended by the DfT the routes were prioritised using the definitions shown below.

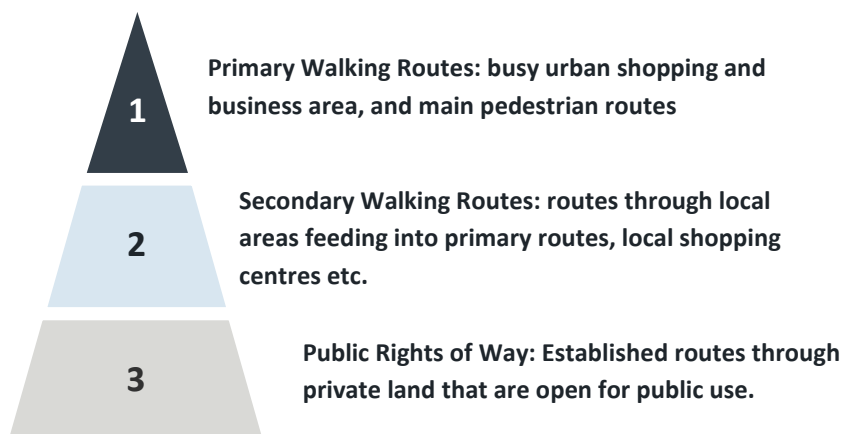
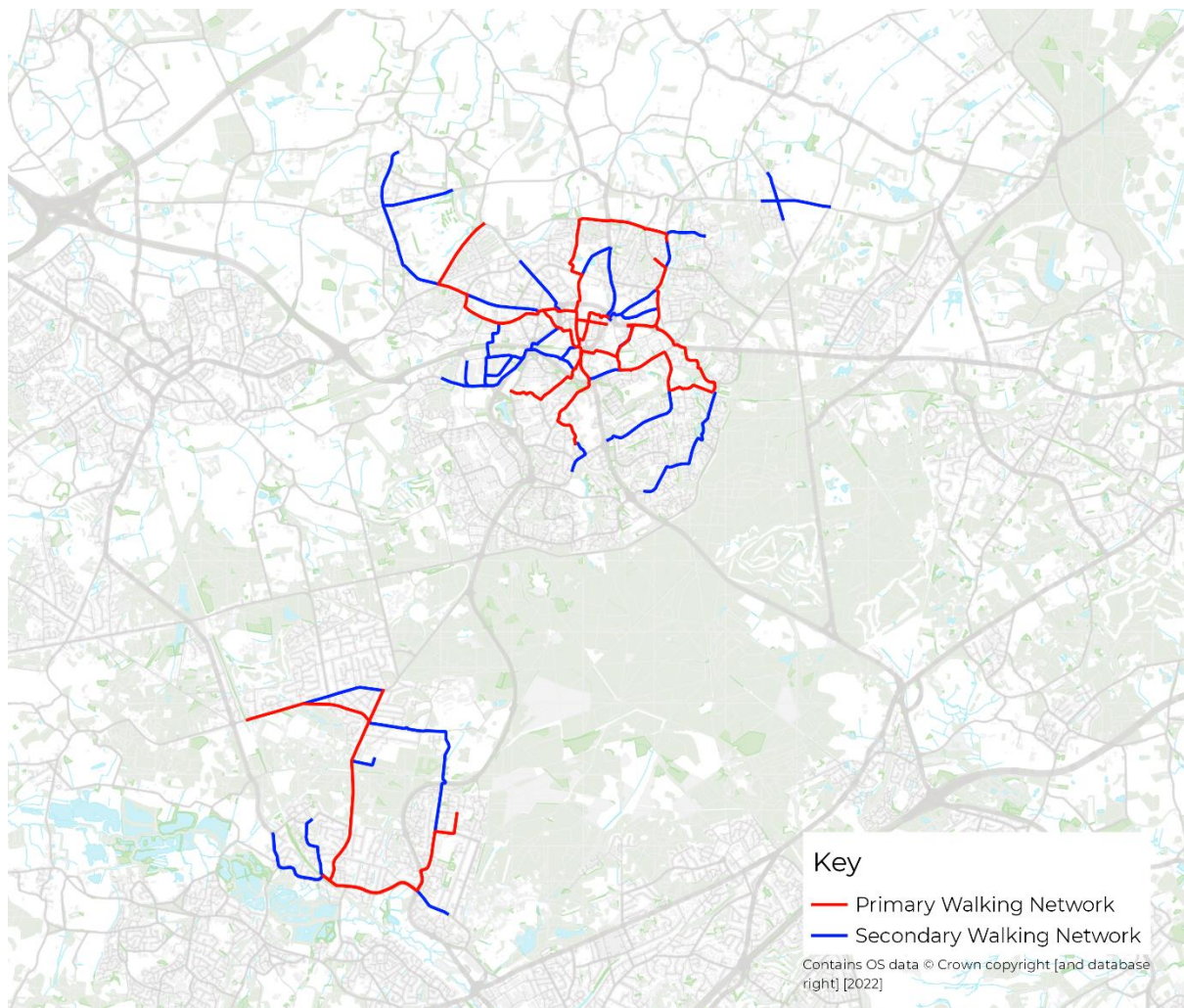


Figure 19 – Primary and secondary walking network



Chapter 4 – Concept development and definition

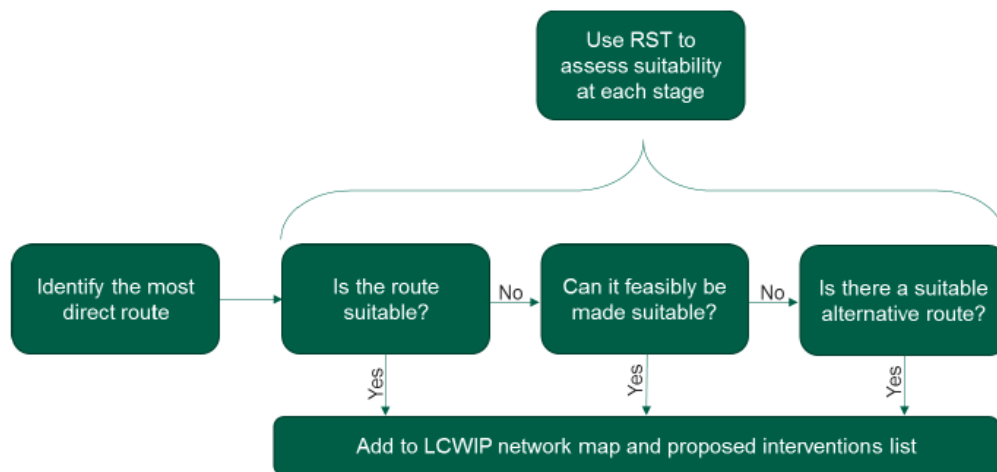
Route selection tool

Once the network plans were updated following stakeholder comments, the final selection of primary routes were considered for auditing. Due to resource limitations, secondary routes and some primary routes could not be audited by the LCWIP project team. A subset of primary routes for audit was selected based on stakeholder feedback and discussions between WSP and BFC.

Audits were undertaken by trained WSP personnel visiting each route corridor on location using the Department for Transport's Route Selection Tool (RST). The tool was used to assess the suitability of a route in its existing condition against the core design outcomes:

- > Directness
- > Gradient
- > Safety
- > Connectivity
- > Comfort

The process of scoring routes against the criteria in the RST identified issues (e.g. cyclists mixing with too high volumes of traffic) which informed the identification of infrastructure solutions (e.g. segregated infrastructure). The RST also identified critical issues at junctions to be addressed with infrastructure changes.



Walking route audit tool (WRAT)

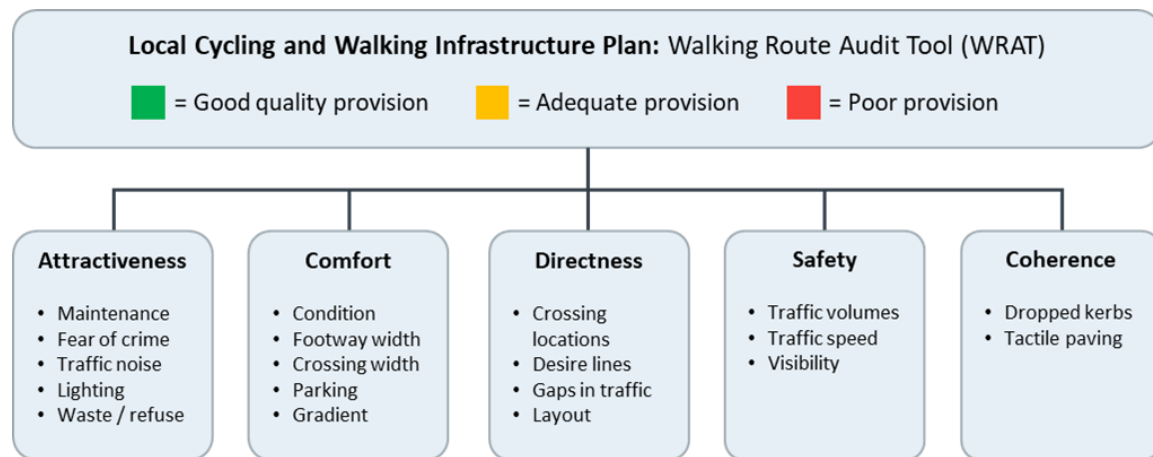
The WRAT process considers the needs of all users, including vulnerable pedestrians, such as those who are older; visually impaired; mobility impaired; hearing impaired; with learning difficulties; buggy users or children. The process of scoring routes against the criteria in the WRAT identified issues (e.g. lack of crossing points) which informed the identification of infrastructure solutions (e.g. new zebra or signalised crossings).

Audits took place in Summer 2022 with staff from BFC, they accompanied WSP staff during an initial training session where they were given the opportunity to observe and undertake audit activities. As a result of this, BFC staff became more confident in their knowledge of the process and gained the ability to undertake audits independently.

The majority of audits for cycling routes were undertaken by WSP and BFC personnel using bicycles, which provides a more accurate perception of the conditions along the route and challenges / issues that are present for cyclists that currently use the route. This

subsequently assisted in developing infrastructure improvements that are bespoke to the issues present on each route.

Once route audits were complete, infrastructure improvement plans were developed for walking and cycling. The improvements identified in this report are high level only and have not been taken through to design stages. The following pages provide an overview of the varying infrastructure improvements which have been considered for Bracknell Forest.



Side road improvements

- > Side roads with large turning radii / junction mouths encourage vehicles to turn at high speed. They also increase crossing distances for pedestrians.
- > Building out footways is one way to reduce this turning radii and slow turning vehicles.
- > Add dropped kerbs and/or tactile paving where missing
- > Additionally, a continuous footway can slow vehicles further and provide priority to people walking or wheeling.



Cycle track infrastructure

Protected cycle tracks can be designed as kerb separated, stepped, or as footway level cycle tracks. However all three types provide a level of separation between cycle traffic and motor traffic / pedestrians

Other key features of cycle tracks include continuation / priority over side roads and bus stop bypasses (the continuation of cycle tracks behind bus stops). Examples of this are shown opposite.

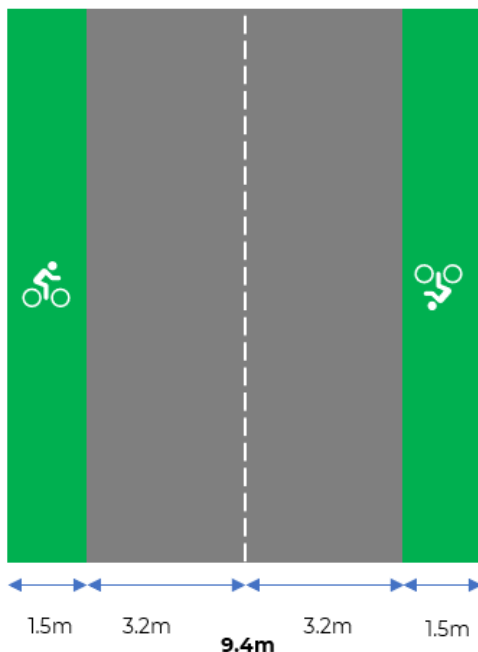


Finding space for cycling

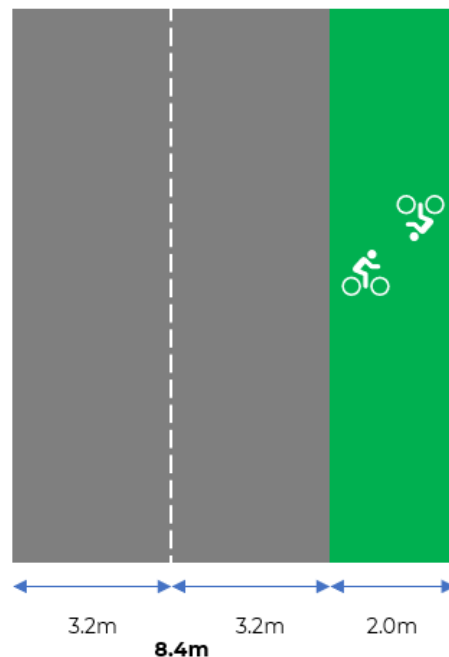
The diagram below shows the absolute minimum width requirements for cycle infrastructure according to LTN 1/20.

Absolute minimum cross-sections

One-way stepped cycle tracks



Two-way stepped cycle track



To accommodate this within the carriageway, designers will often consider the removal of central hatching, turning pockets, parking or traffic lanes, or consider narrowing traffic lanes. Shown opposite is an example from Waltham Forest, where central hatching, a turning pocket and a staggered signalised crossing have been replaced with protected cycle tracks and a straight across crossing.



Signalised crossing point

Installation of new signalised crossings or improving existing signalised crossing by increasing the green time and/or repairing audit aids.

Where cycle facilities are aligned, they should compose parallel crossing points for pedestrians and cyclists as opposed to toucan crossings. Otherwise, these should be simple pedestrian crossings for example puffin crossings.



New zebra / parallel crossing

New priority crossings to separate pedestrians and cyclists. Where these align with cycle facilities, these should be a combination of parallel and zebra crossings as pictured above. Where these have been proposed to replace existing uncontrolled crossings with traffic islands, this will remove pinch points for cyclists on the carriageway.

Whether a crossing should be a zebra/ parallel crossing or a signalised crossing should be investigated further at the feasibility stage.



Traffic calming

Cycle friendly calming features in streets and/or reducing speed limits to safe levels for cyclists. Narrowing traffic lanes and carriageways using planters or raised pavements are common examples. Additional measures include parking restrictions, resurfacing and gully cover replacement.

Some traffic-calmed streets may also be suitable for contraflow cycling (either with or without cycle lanes).

Speed cushions should be avoided if possible.

Traffic filter

A traffic or modal filter is a restriction on general traffic that does not apply to those walking, wheeling and cycling. These are often enforced with physical measures such as bollards, planters or kerbs.

Filters can be used to remove through traffic on specific streets, or can be used on a more area wide basis as part of a low-traffic or 'liveable' neighbourhood. These measures discourage travel by car, reduce exposure to noise/air pollution and create a safer and more comfortable environment for walking and cycling.

In some cases it will be considered desirable to maintain access for local buses or emergency services. In London open filters can instead be camera enforced, with fixed penalty notices issued to users not permitted to pass through the filter. Camera enforcement also allows for timed operation and the ability to allow access to resident permit holders. Local authorities outside of London are not able to enforce moving traffic offences in this way, however, the government has said it intends for local authorities to be able to apply for these powers soon.



Existing cycle infrastructure examples in Bracknell Forest



Bus and cycle only restriction on Holly Spring Lane



Walking at cycling priority at side road at Threshfield

Walking infrastructure improvements

Maintenance

Where this is highlighted as an issue, the route likely requires immediate maintenance to bring it to standard, and it may be that a longer term programme of maintenance needs to be developed in order to ensure that this route is maintained to a standard commensurate with its importance in the active travel network.

Increase Surveillance

Increased surveillance can increase both the perception of and actual level of safety for users. This can be through technology, such as CCTV or 'help' points, or natural surveillance such as that afforded by good sightlines (which could be linked to maintenance), higher levels of activity, additional access points and permeability, or police patrols where deemed necessary.

Place-based Interventions (Greening, Streetscape, Seating Etc)

These are measures that enhance the look and feel of an area, including tree planting, street art, paving, seating, and other features to make public spaces more attractive. This is likely to be very bespoke to each area where required, but can be as simple as planting, such as trees or rain gardens (perhaps as part of Sustainable Urban Drainage Systems), or could be significant changes involving use of materials, sculpture, art installations, or water features.

Footway Widening

While minimum footway width guidance has changed over the decades, Transport for London's Pedestrian Comfort Guidance is based on the level of comfort that width provides to users, rather than generic recommendations. However, widening the footway can be problematic, particularly where superfluous carriageway doesn't exist. Where this is recommended, it may be most feasible where undertaken alongside cycle schemes which also require significant changes to the highway.

Parking Controls

Where indiscriminate parking creates an issue for pedestrians, this could be due to various issues and a bespoke solution is likely to be required. This could be through provision of dedicated bays on carriageway, appropriate parking permit schemes, or perhaps greater enforcement of existing restrictions.

Crossing Points

To ensure the safe crossing of pedestrians, it is important to use desire lines to reduce the length of time a pedestrian crosses the road. These allows the pedestrian to take the most direct path. To do this signals are improved and islands/pedestrian refuges in the middle of the road are removed, prioritising the pedestrian and their continuous movement over motor traffic.

Changes can also be made to other junction types such as roundabouts that may not offer facilities for other road users at all.

Wayfinding

This intervention encompasses all of the ways in which road users orient themselves and navigate from place to place. Wayfinding improvements can be as simple as directional and distance signage at key junctions but can also include large maps or interactive screens; these are becoming increasingly popular in town centres.

The following improvements can also be defined as wayfinding interventions:

Speed Reduction Scheme

Speed reduction schemes need to be self-enforcing using methods that are geographically specific depending on the location. Popular enforcement methods include using cameras to monitor average speed limit zones or physical traffic calming measures such as planters, parking controls and reduced kerb radii. These also change the fundamental purpose and feel of a street.

Visibility Improvements

Another place-based intervention is maintaining the natural landscape to prevent it from becoming an obstacle to pedestrian access. Cutting back overgrown vegetation near crossing points and on tight corners can help to improve pedestrian visibility

Dropped Kerbs/Tactile Paving

Dropped kerbs ease the pedestrian journey by levelling the footway and carriageway. They are essential for ensuring the walking network is accessible for wheelchair users by providing them with a safe and coherent crossing space. Tactile paving also helps people with sight impairments understand the street and crossing points.

Tactile Cones At Crossing Points

Tactile cones at crossing points are a further intervention that significantly improve the safety of junctions and crossing points for the visually and hearing impaired. They work by alerting the pedestrian it is safe to cross with a dial beneath the signal box that spins around when the light turns green (see image below).

It is very important that tactile cones and tactile paving are present, correct and adhere to standards as they communicate to visually or hearing impaired pedestrians information about the environment they are in.



The case for prioritising women's safety

Academic research has identified that women experience the highest levels of fear of crime when walking alone particularly in dark or isolated spaces. This fear of crime can become a major barrier to women switching to active transport so it is necessary to address this in LCWIP design.

Violence against women has gained significant media attention over recent years. Attacks against women including the murder of Sarah Everard in 2021 have increased awareness about the perceived risk women and other minority groups experience when travelling.

Response to women's fear of crime has been slow however councils across the UK are starting to gain more awareness and take actions to reduce the likelihood of harassment against women and increase the perception of safety. In response to recent incidences, the UK Government announced £25 million for better street lighting and CCTV; Women's Safety Charters are being adopted by many workplaces and numerous council are announcing additional funding to help make venues and public spaces safer for women at night.

Types of improvement

When designing urban environments with women's safety in mind, spaces which improve the ability to see and be seen, and provide refuge or escape are most desirable (Stark and Meschik, 2018). With this in mind, open spaces that are well lit would improve women's perceptions of safety. Alleyways or pathways with high walls would be considered isolated and may increase women's fear of crime.

Street Lighting

Streets should have sufficient lighting that illuminates the pavement and allows pedestrians to see a far distance ahead. 85 per cent of women believe better lit streets help improve the feeling of safety. Street lights should not be placed directly beneath trees as they can cast the light downwards reducing onward visibility when directly underneath it.

Where they cannot be avoided on the street network, subways should be made as light as possible so that the exit is always visible.

Surveillance

The presence of CCTV cameras can improve women's feeling of safety. 78 per cent of women believe increased CCTV coverage in public places would make them feel safer when walking at night (YouGov, 2021).

Streets that are overlooked by windows and front doors also help women to feel safe and can reduce the risk of crime.

Pedestrian Priority

Using zebra crossings where possible and ensuring crossings are as direct as possible prevents pedestrians from waiting at crossings for undesirable lengths of time.

Widening Footways

Widening footways helps to improve prospect and offers more space for pedestrians to spread out on the network. This increases the feeling of safety as women will not be forced into small or isolated spaces with strangers whilst walking.

Cross Boundary Routes

Wokingham and Bracknell

As shown in Figure 20 we engaged with Wokingham Borough Council to ensure cross-boundary connections have been considered and developed in partnership.

We have been focusing on improving access to Wokingham's strategic development location from the Bracknell side and the housing development on the South Wokingham Distributor Road as part of the LCWIP development.

Primary Network:

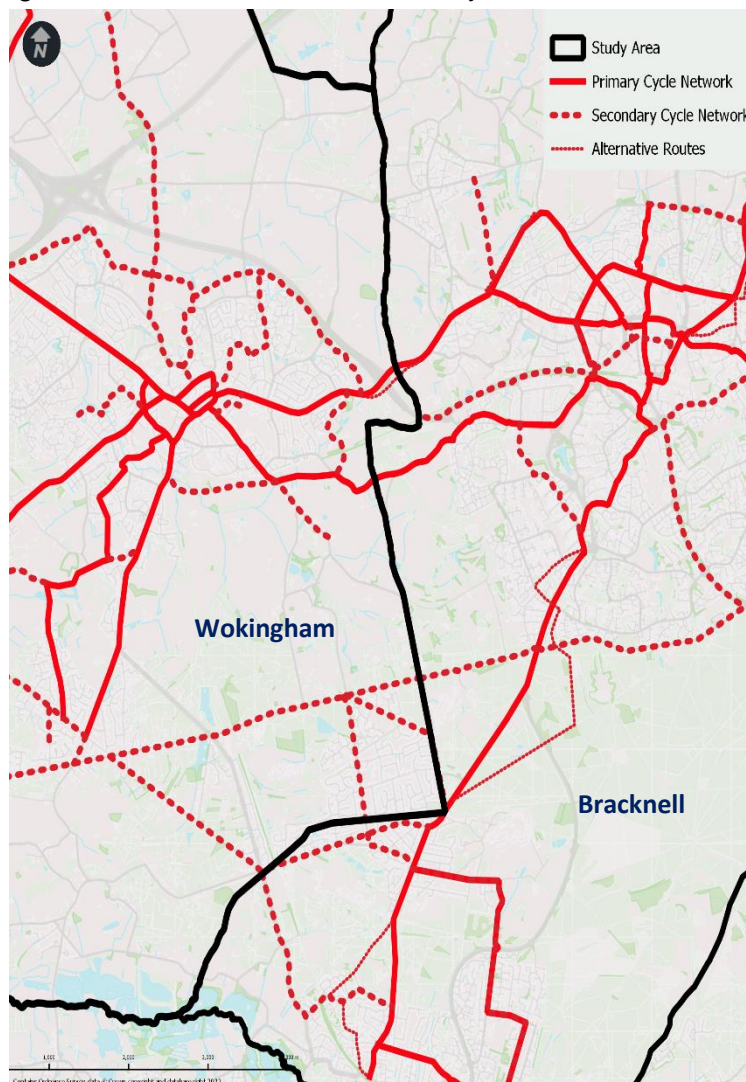
- > London Road
- > Wokingham to Bracknell Greenway

Secondary Network:

- > Nine Mile Ride
- > Dukes Ride
- > New Wokingham Road

We will continue to engage with Wokingham Borough Council on further iterations and evolution of this LCWIP.

Figure 20 – Indicative cross boundary routes



Scheme Concepts

Cycling

The cycling network outlined over the previous slides has been developed further, with indicative concepts developed for each cycle route.

In developing these concepts a high-level assessment of constraints such as carriageway width, traffic volumes and existing infrastructure provision was made to inform the design of possible interventions. Each route was cycled by a trained auditor, who completed a Route Selection Tool (RST), as specified in the LCWIP technical guidance issued by the DfT (2017). RST outputs were used to highlight issues that scheme concepts should address, and suggest initial interventions that could be considered.

More detailed scheme concepts for each route were then developed, with designs that were compliant with the latest government guidance on cycle infrastructure design (LTN 1/20).

These indicative scheme concepts are outlined over the following pages.

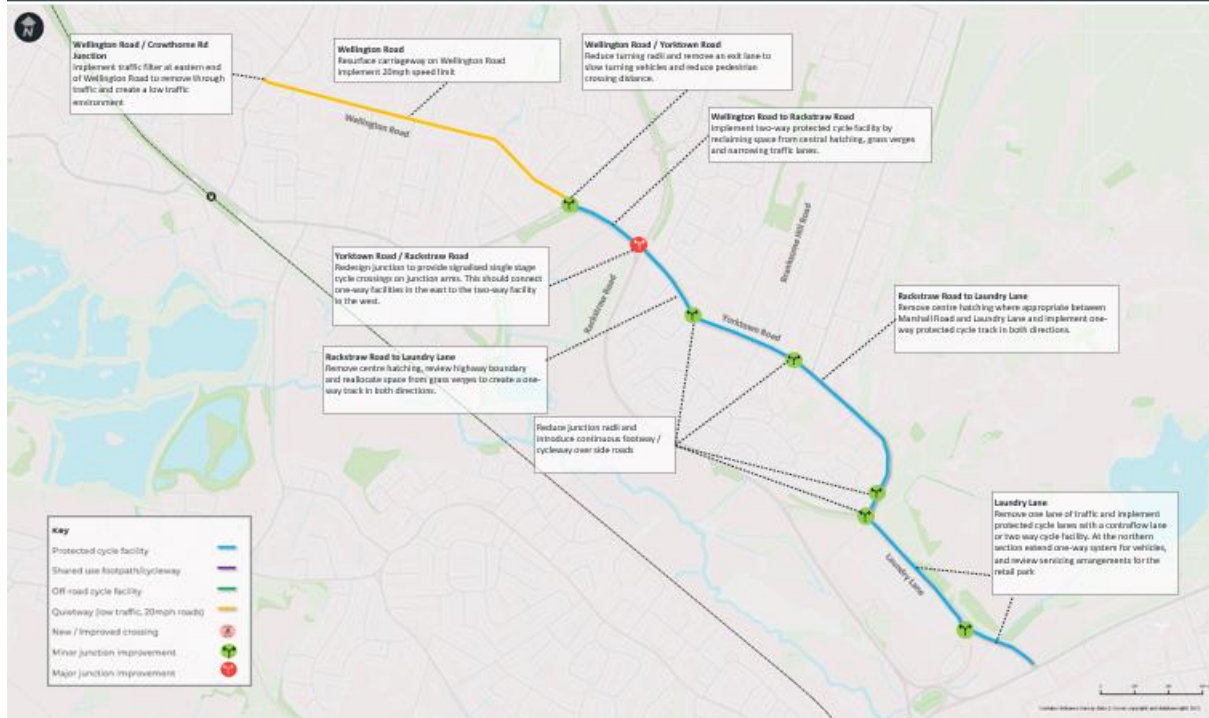
It is important to note that at this stage scheme concepts are high level and indicative. Each scheme will need to undergo feasibility testing, stakeholder engagement, and detailed design.

As part of this process schemes will be consulted on and resident feedback incorporated into any final scheme.

Cycle Route 1

Blackwater to Sandhurst

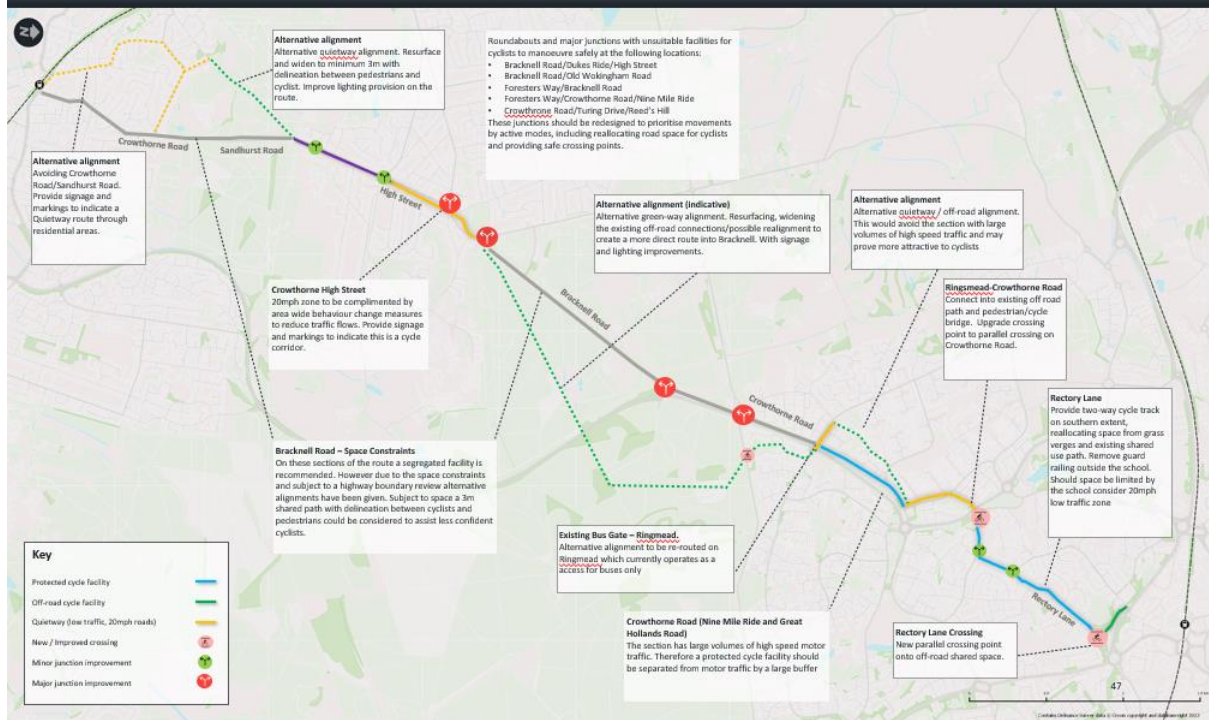
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Cycle Route 2

Sandhurst to Bracknell

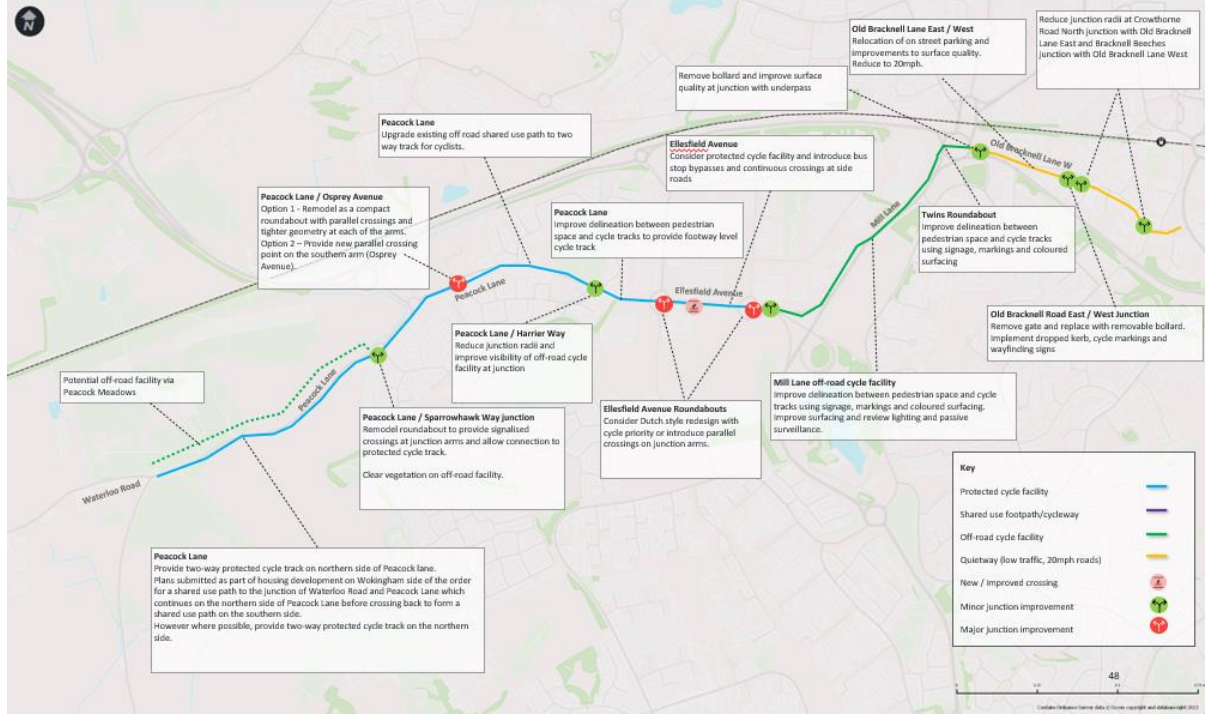
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Cycle Route 3

Bracknell to Wokingham, via Jennetts Park

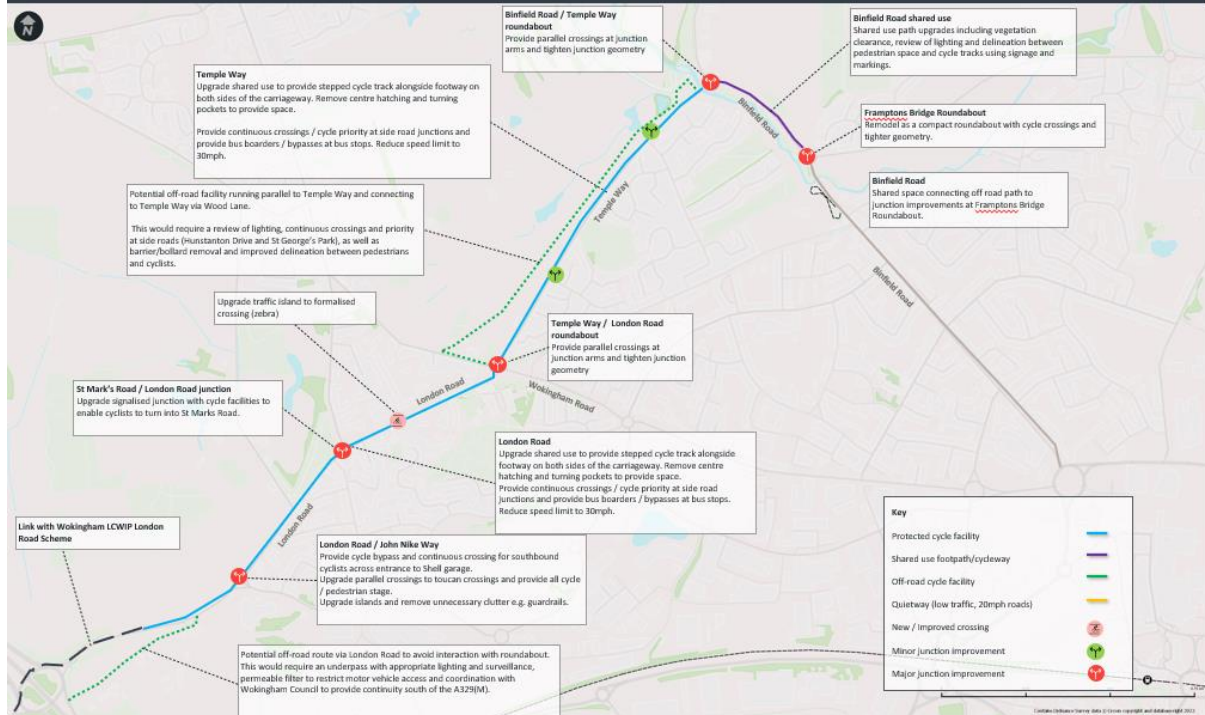
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Cycle Route 4

Woodhurst to Wokingham

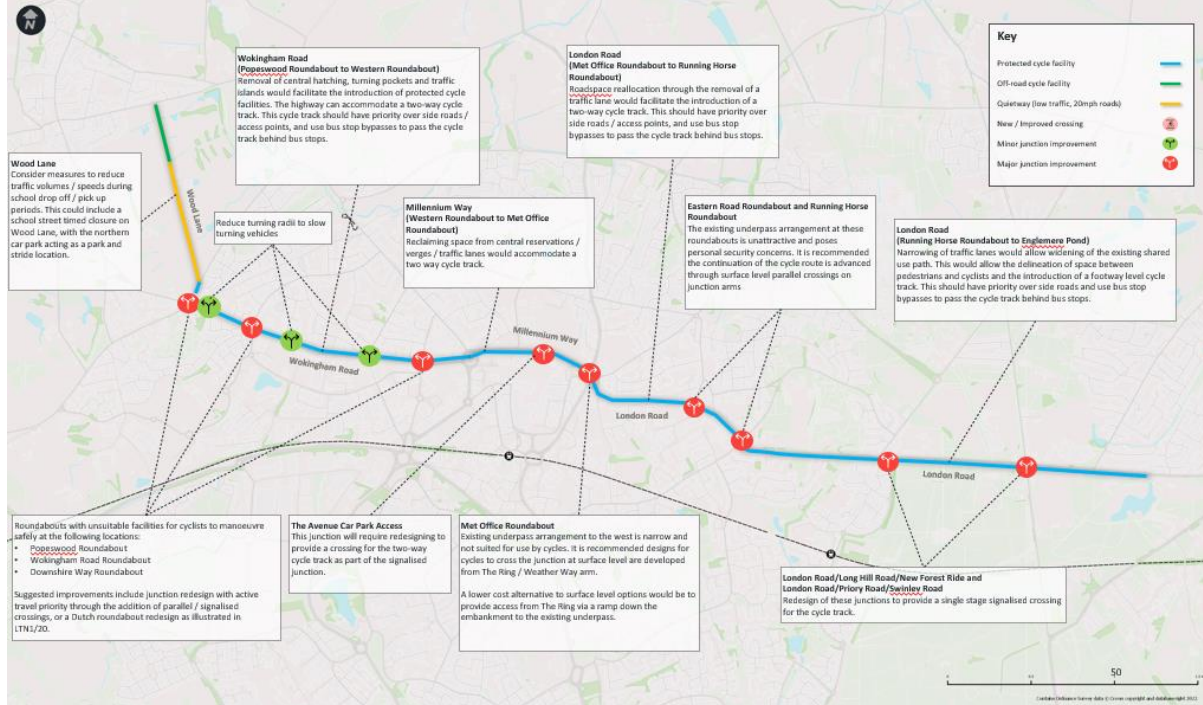
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Cycle Route 5

Binfield to Ascot

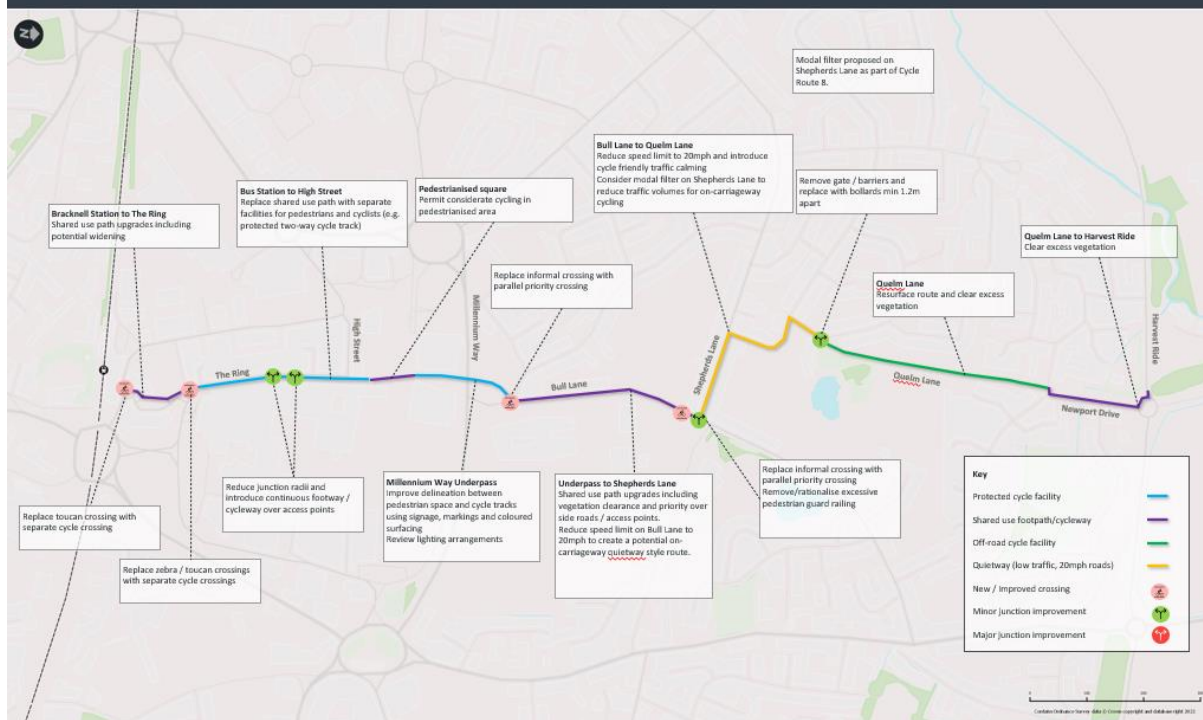
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Cycle Route 6

Bracknell Railway Station to Harvest Ride

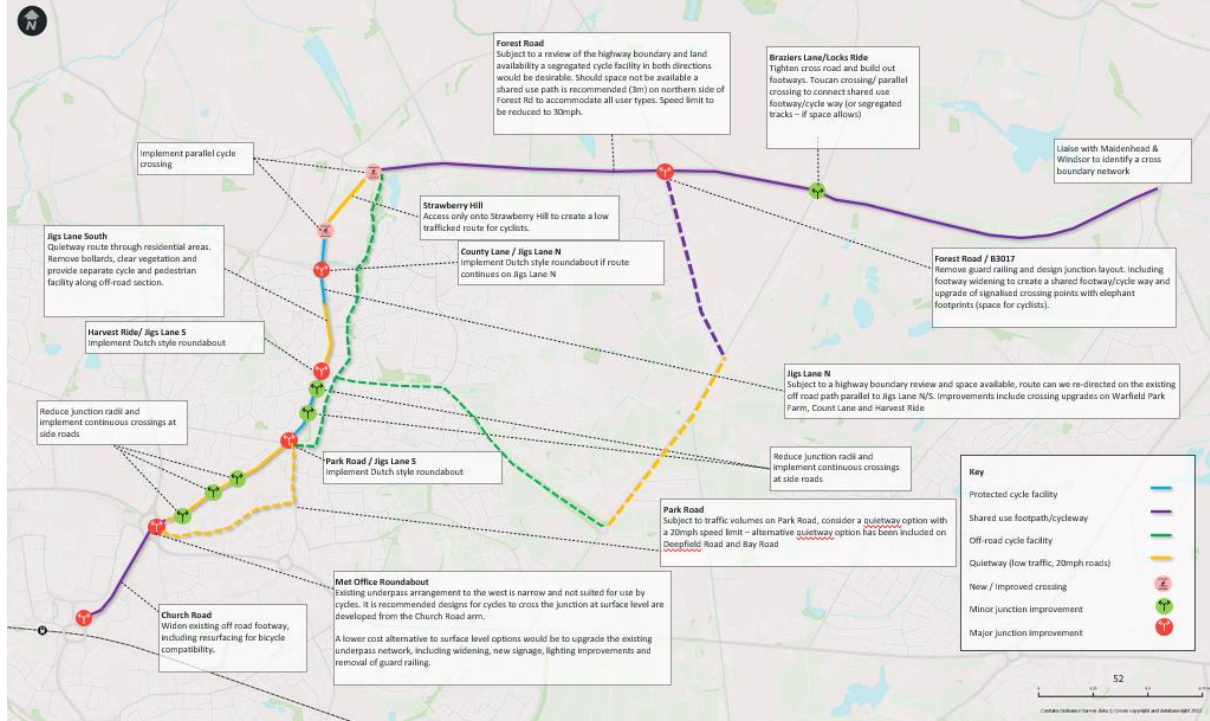
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Cycle Route 7

Bracknell towards Windsor

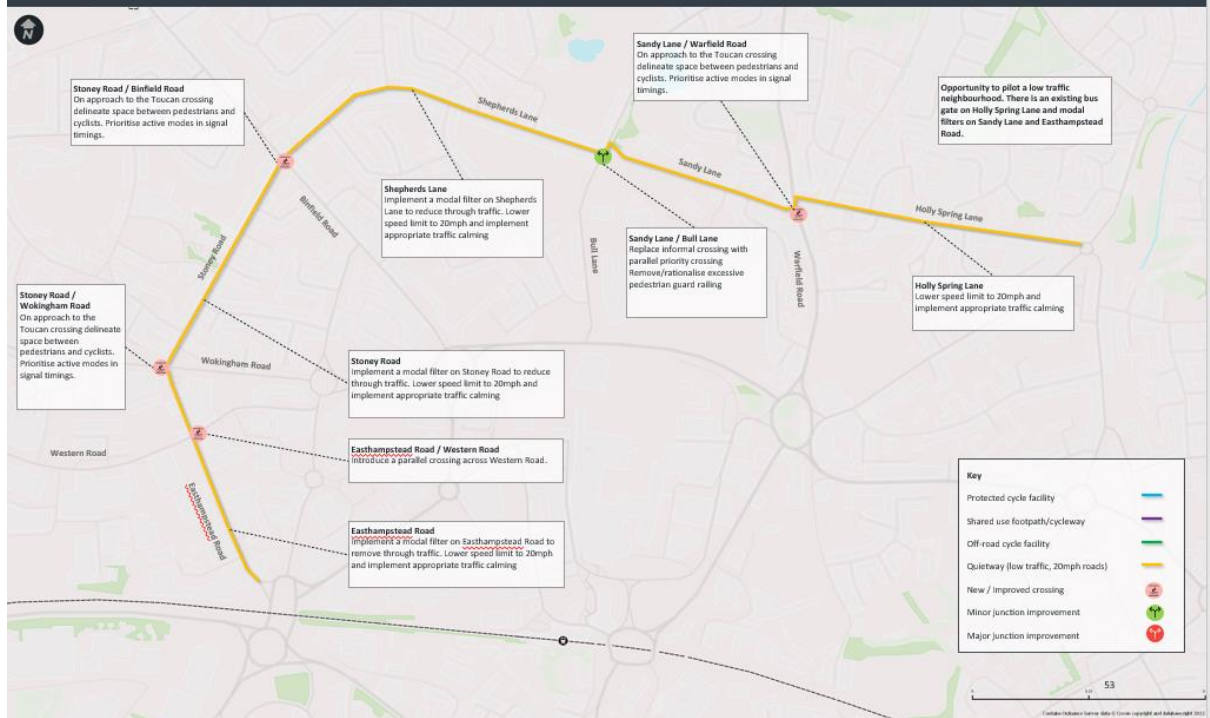
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Cycle Route 8

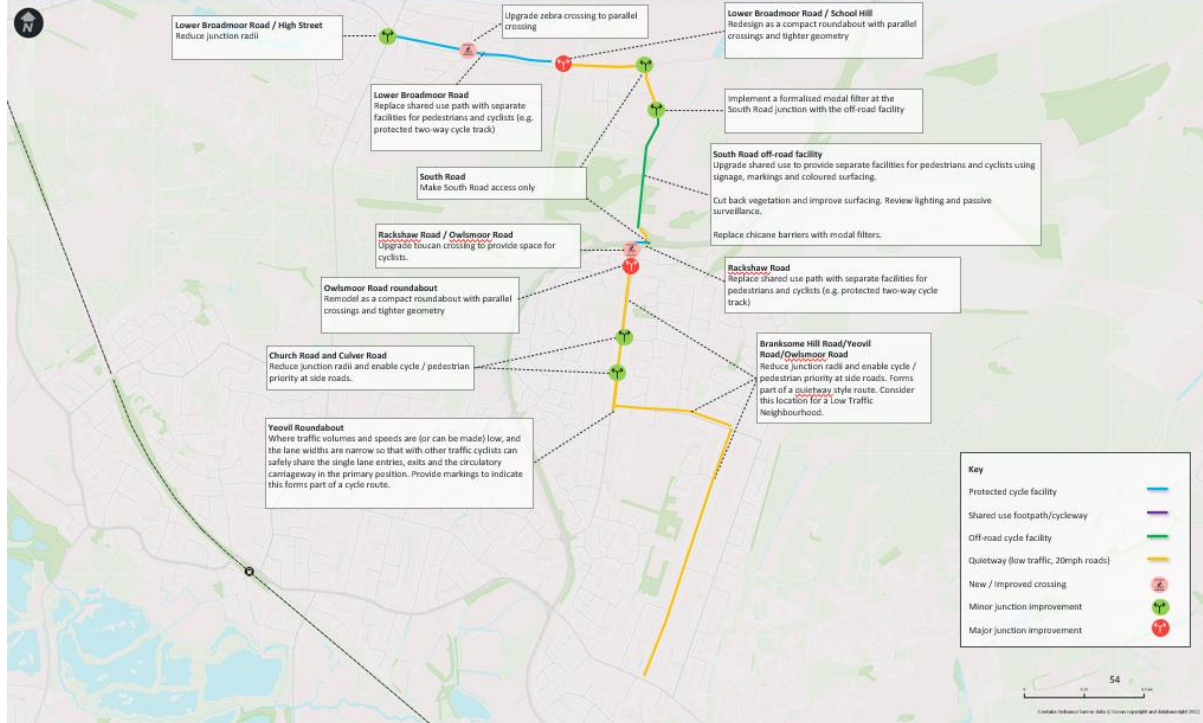
Twin Bridges to Jigs Lane

wsp



Cycle Route 9

Crowthorne to Sandhurst



Walking concept designs

The walking network produced during network planning has been developed further, with indicative concepts developed for each walking route.

In developing these concepts a high-level assessment of constraints such as carriageway width, traffic volumes and existing infrastructure provision was made to inform the design of possible interventions. Each route was walked by a trained auditor, who completed a Walking Route Audit Tool (WRAT), as specified in the LCWIP technical guidance issued by the DfT (2017). WRAT outputs were used to highlight issues that scheme concepts should address, and suggest initial interventions that could be considered.

More detailed scheme concepts for each route were then developed, with designs that were compliant with the latest government guidance on pedestrian facilities. These indicative scheme concepts are outlined over the following slides.

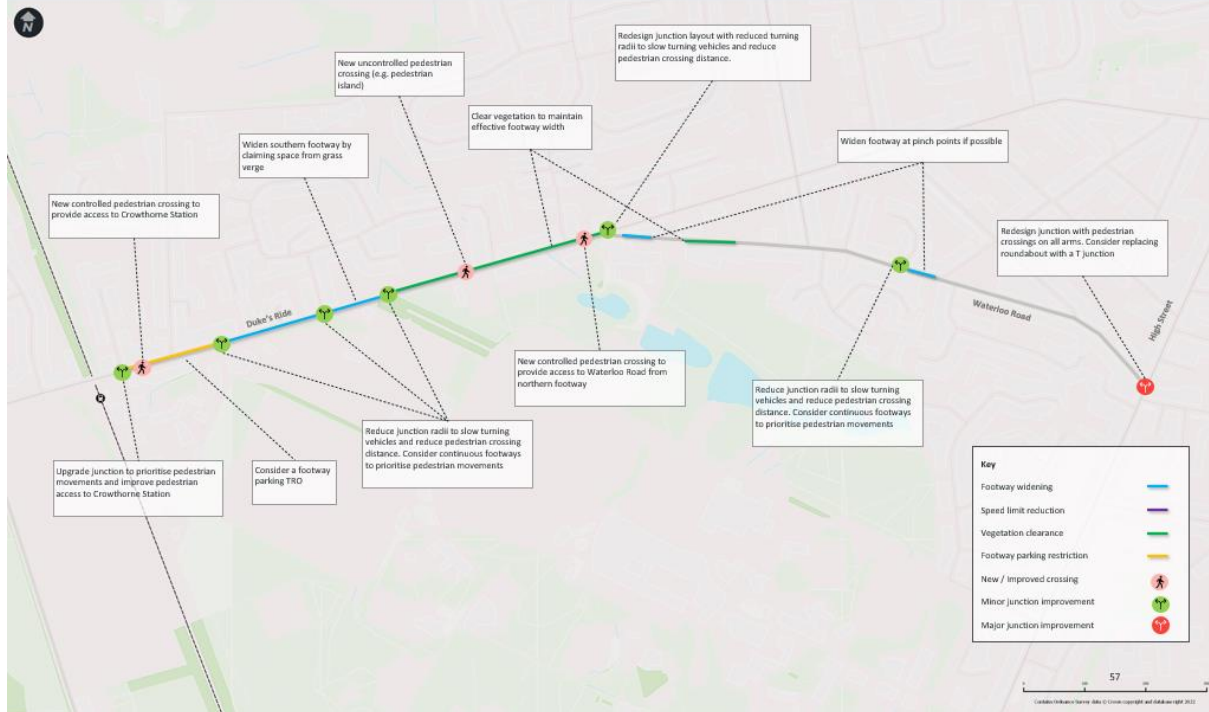
It is important to note that at this stage scheme concepts are high level and indicative. Each scheme will need to undergo feasibility testing, stakeholder engagement, and detailed design.

It is expected that as part of this process schemes will be consulted on and resident feedback incorporated into any final scheme.

Walking Route 1

Crowthorne Station to Crowthorne Town Centre

wsp



Walking Route 2

Sandhurst Station to Crowthorne

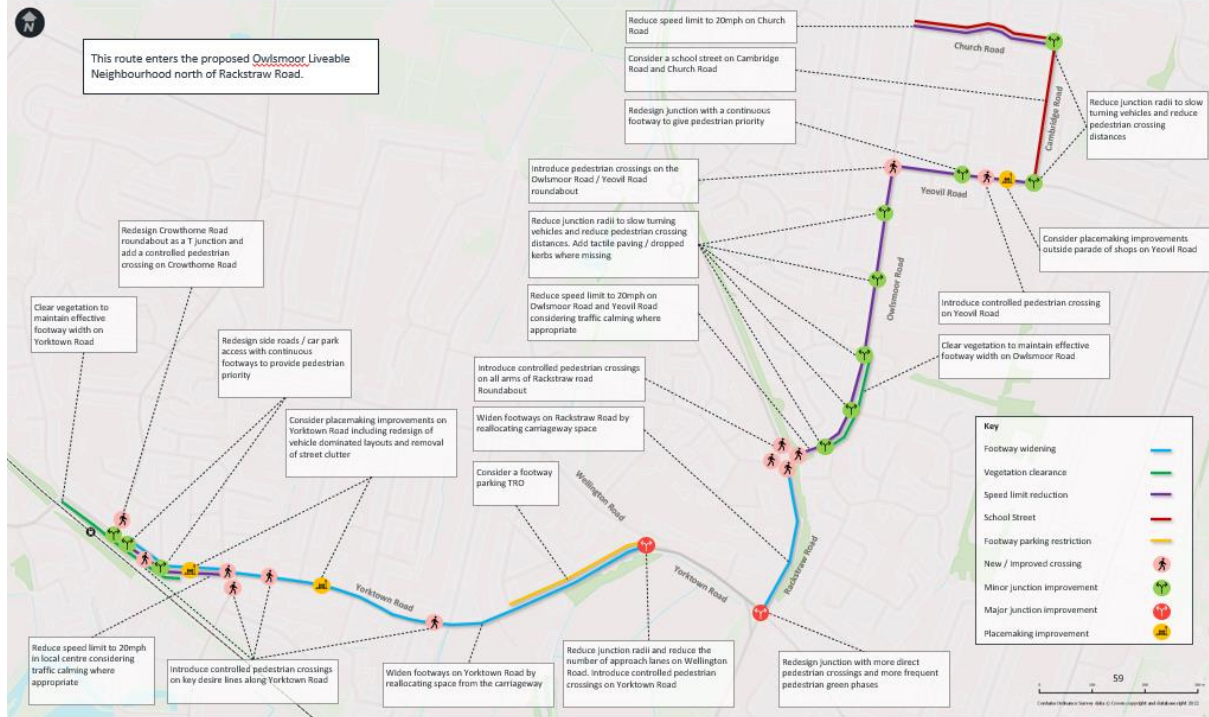
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Walking Route 3

Sandhurst Station to Owlsmoor

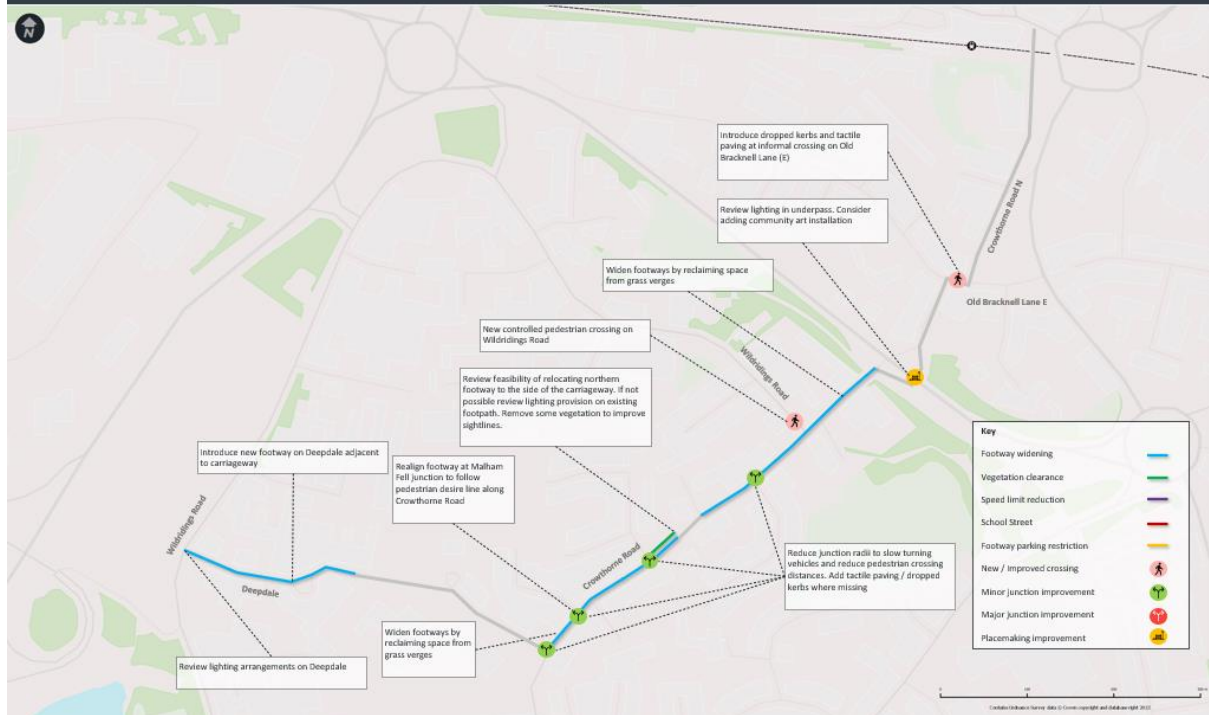
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Walking Route 4

Bracknell Station to Wildridings Road

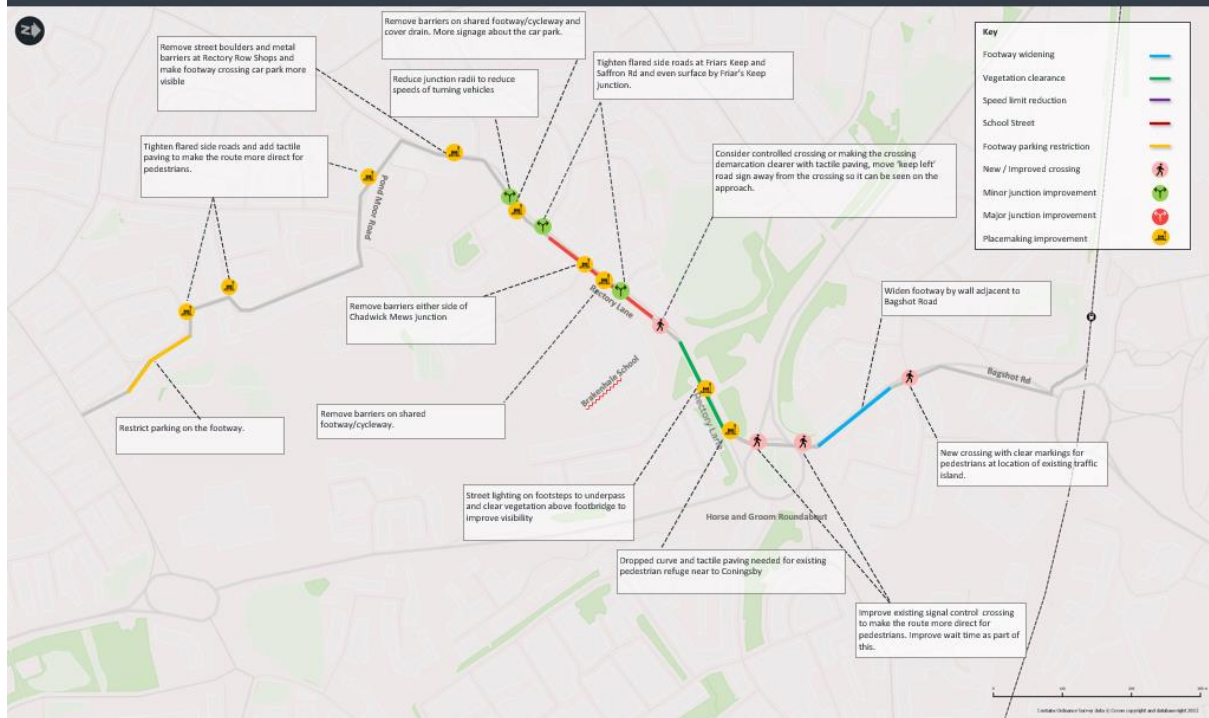
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Walking Route 5

Station to South Hill Road

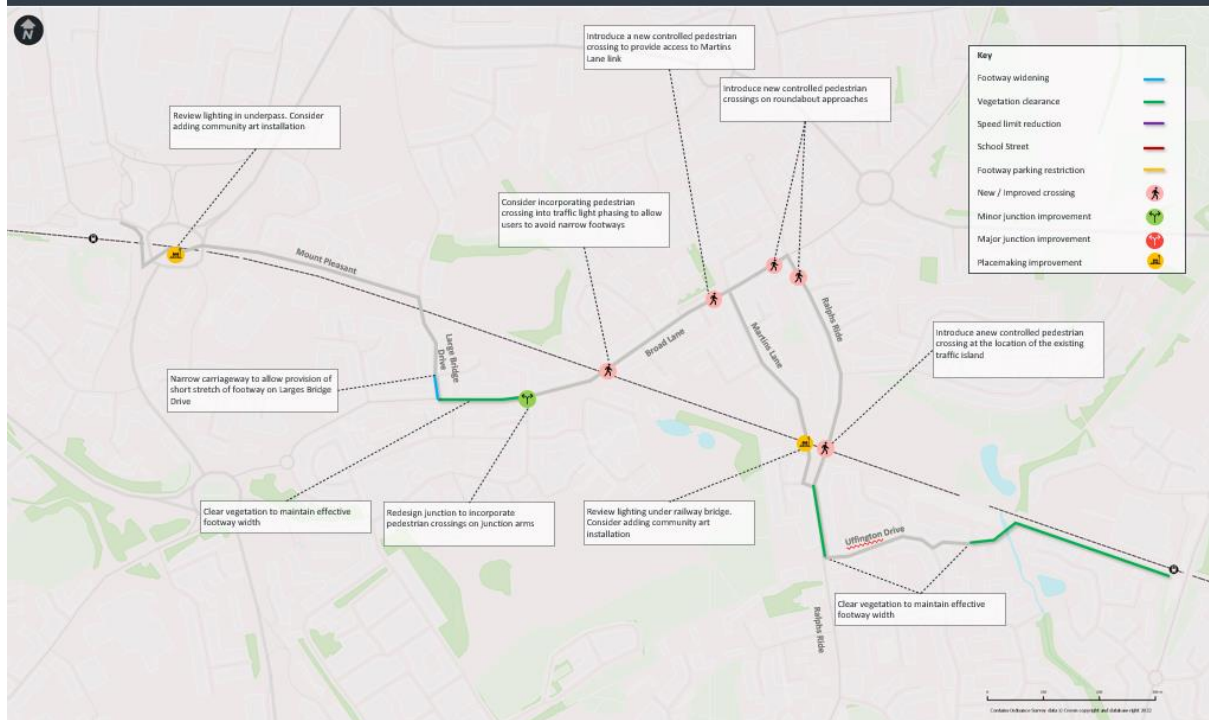
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Walking Route 6

Bracknell Station to Martins Heron Station

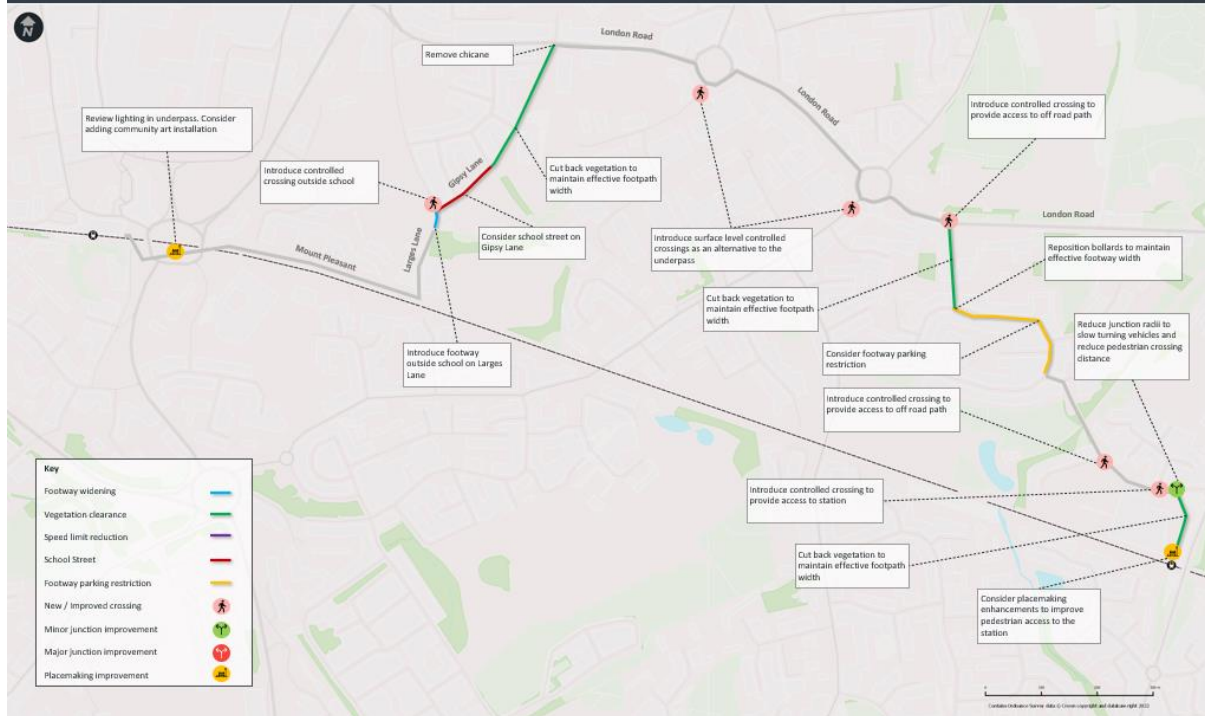
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Walking Route 7

Bracknell Station to Martins Heron

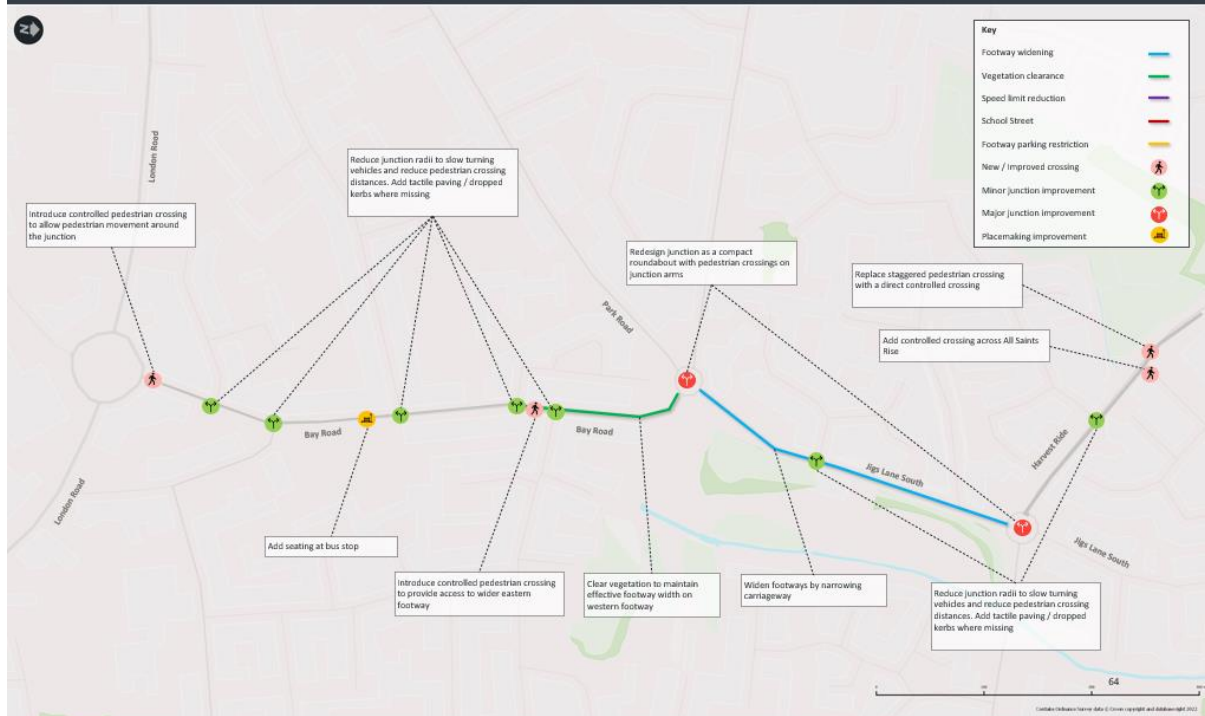
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Walking Route 8

London Road to Whitegrove Causeway

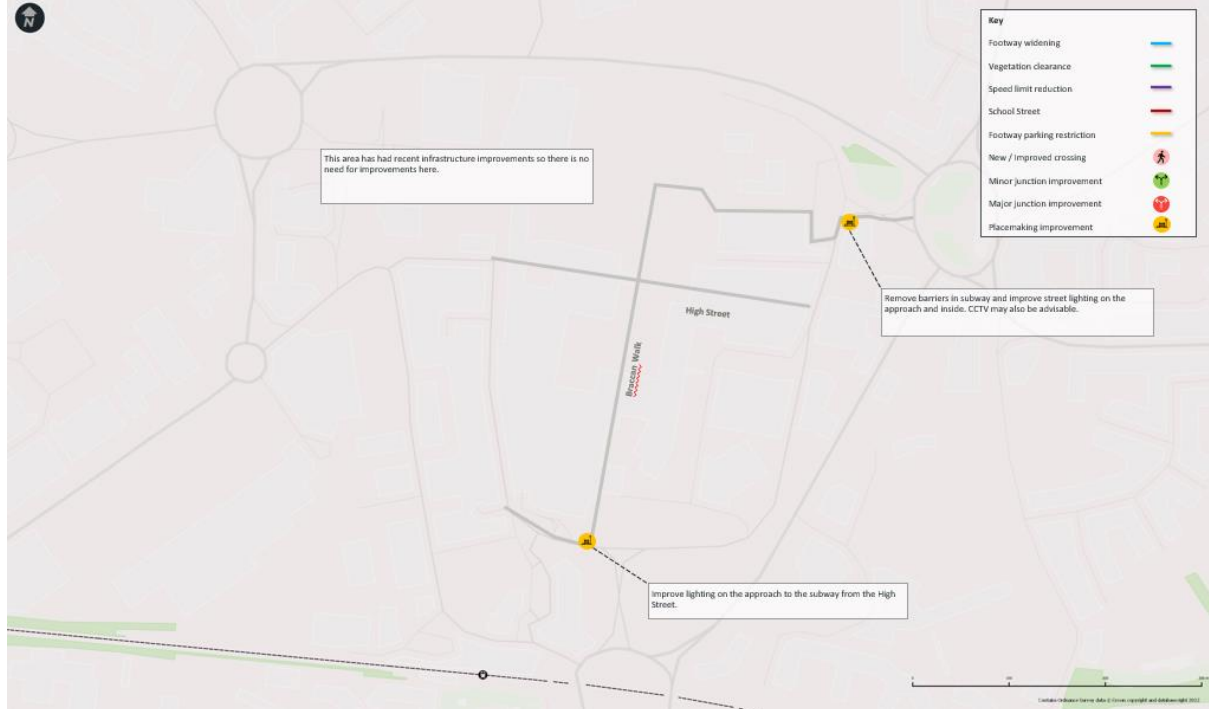
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Walking Route 9 & 10

Bracknell High Street

wsp



Walking Route 11

Bracknell Station to Shepherds Lane

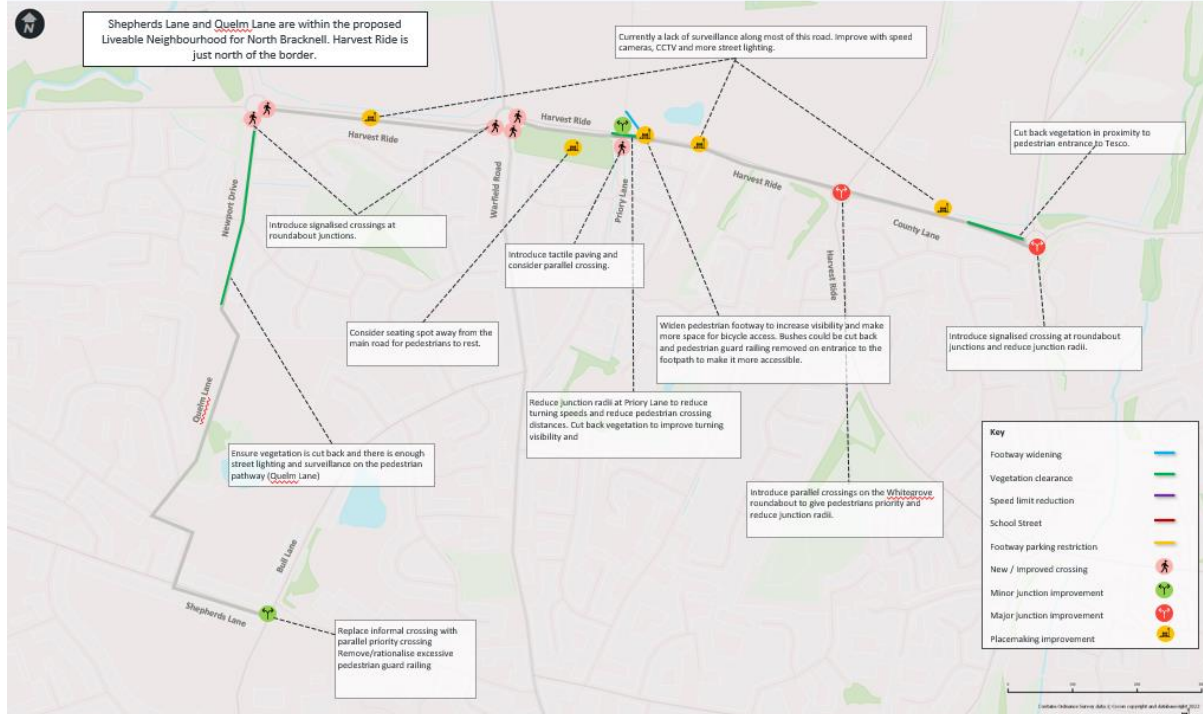
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Walking Route 12

Shepherds Lane to North Bracknell Retail Park

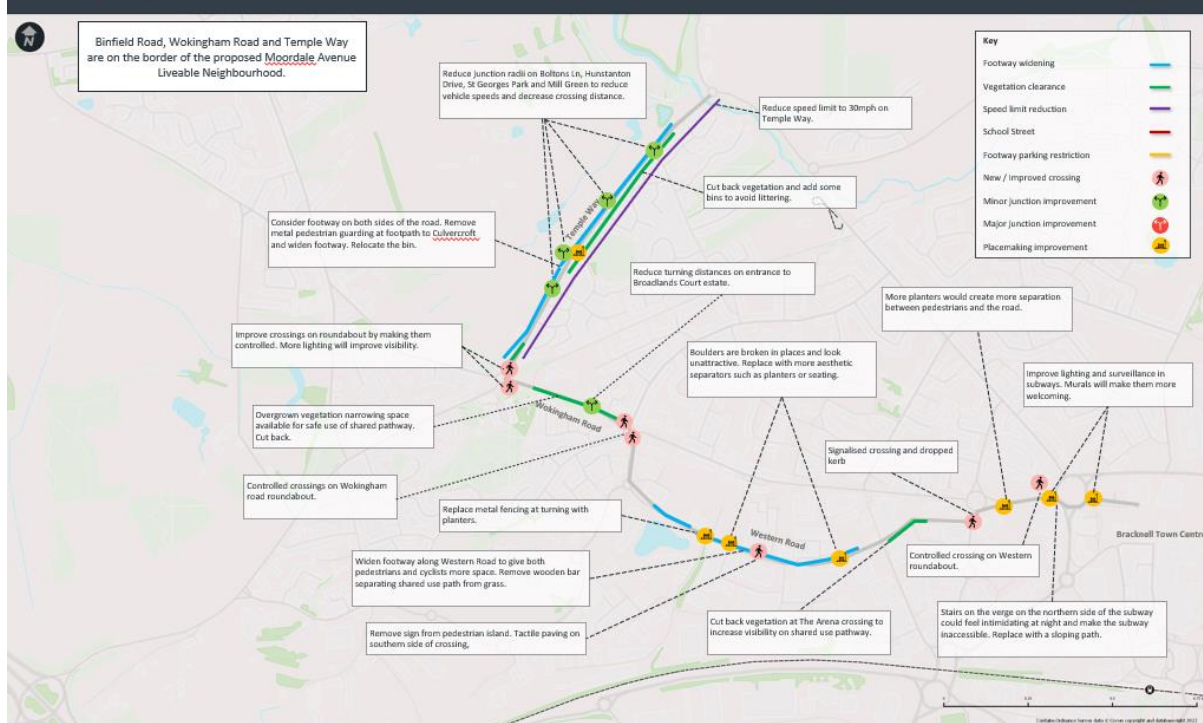
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Walking Route 13

Woodhurst to Western Business Area

wsp



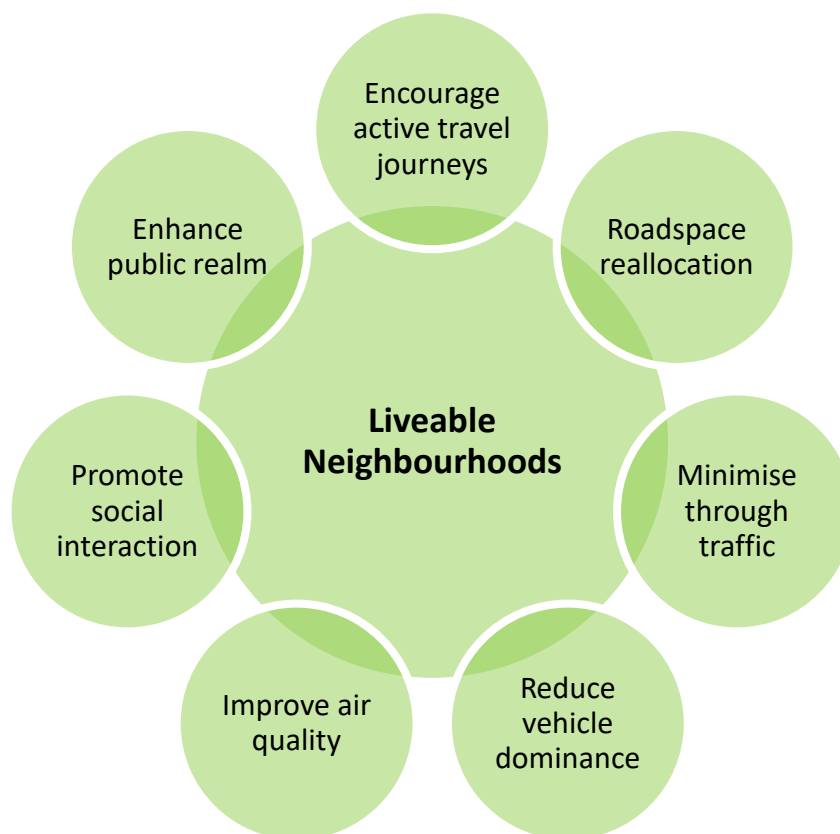
Liveable neighbourhoods

This section describes the process used to identify areas within the borough which are suitable for the introduction of a 'Liveable Neighbourhood'. Liveable Neighbourhoods are intended as complementary measures to the walking and cycling network plans and seek to create areas that encourage sustainable travel and reduce the dominance of motor vehicles. This achieved through reconsidering how road space is allocated to create fairer access to the street for all road users.

Identifying Liveable Neighbourhoods

Following the identification of key walking and cycling routes within Bracknell Forest, the potential for creating Liveable Neighbourhoods across the borough was examined. By focussing on the potential for cycling on quieter, residential streets, the Liveable Neighbourhood approach perfectly complements the standard LCWIP approach of providing dedicated facilities on busier streets. By considering both routes and neighbourhoods, urban areas can be analysed more holistically.

To determine suitable locations for the implementation of Liveable Neighbourhoods, an Area Porosity Analysis was undertaken. This process identifies how well neighbourhoods in the borough are currently connected to each other by cycle via safe main road crossings. This includes reviewing whether existing crossings appear to be unsuitable for all cycle designs in their current form. This was conducted using publicly available information, using GIS analysis.



Through this process, areas within Bracknell Forest Borough which are bound by roads which have a strategic movement function were categorised based on the degree of connection with neighbouring areas.

Additional considerations which were taken into account when defining Liveable Neighbourhoods includes comments received in the early public engagement via

Commonplace, particularly any comments which related to 'rat-running'. Liveable Neighbourhoods were also strategically co-located with proposed routes for cycle quiet ways, as they offer complementary features and benefits.

School streets

A School Street is a traffic management scheme which temporarily restricts motor vehicles from accessing the street(s) surrounding a school during drop off and pick up times. The increase in active travel policies that came about as a result of COVID-19 restrictions has increased their prevalence in towns and cities across the UK.

Pedestrian and Cycle Zone signs or simply 'no motor vehicle' signs are placed at the entry points of the School Street zones to inform drivers of the restrictions which operate during set time periods Monday to Friday and during term time only.

An appropriate enforcement method should be considered to reduce motor vehicle traffic outside schools. Enforcement options include:

- Automatic Number Plate Recognition (ANPR)
- Bollards
- Movable barrier or gates

Limited exemptions are permitted for those who require vehicle access to an address within a School Street zone. These usually include residents, blue badge holders and emergency services. Local authorities will then establish their own exemption eligibility policy for additional exemption requests.

Why they are important

School streets key objectives include:

- Reducing congestion by limiting vehicle movements on the roads surrounding the school.
- Improving air quality immediately outside the school gates
- Creating a nicer environment for pupils to walk and cycle to school, improving road safety and fostering a modal shift,

To ensure the locations we have suggested are suitable for a School Street we have undertaken a comprehensive feasibility study involving looking at the road type, it's proximity to major roads and bus routes, the presence of local trip generators and existing walking and cycling infrastructure.

The next step involves making early, meaningful engagement to secure support from the school(s), local businesses and the community and statutory consultees such as emergency services.

Following this, the scheme will be implemented as a trial using an Experimental Traffic Order (ETO). Undertaking periodic monitoring during the trial period will build a case for making the scheme permanent and build support for future schemes.

Potential locations in Bracknell Forest

The proposed liveable neighbourhoods/ Low Traffic Neighbourhoods are to the north and north-west of the town centre within the boundary of Wokingham Road and Warfield Road, and south-west in Owlsmoor.

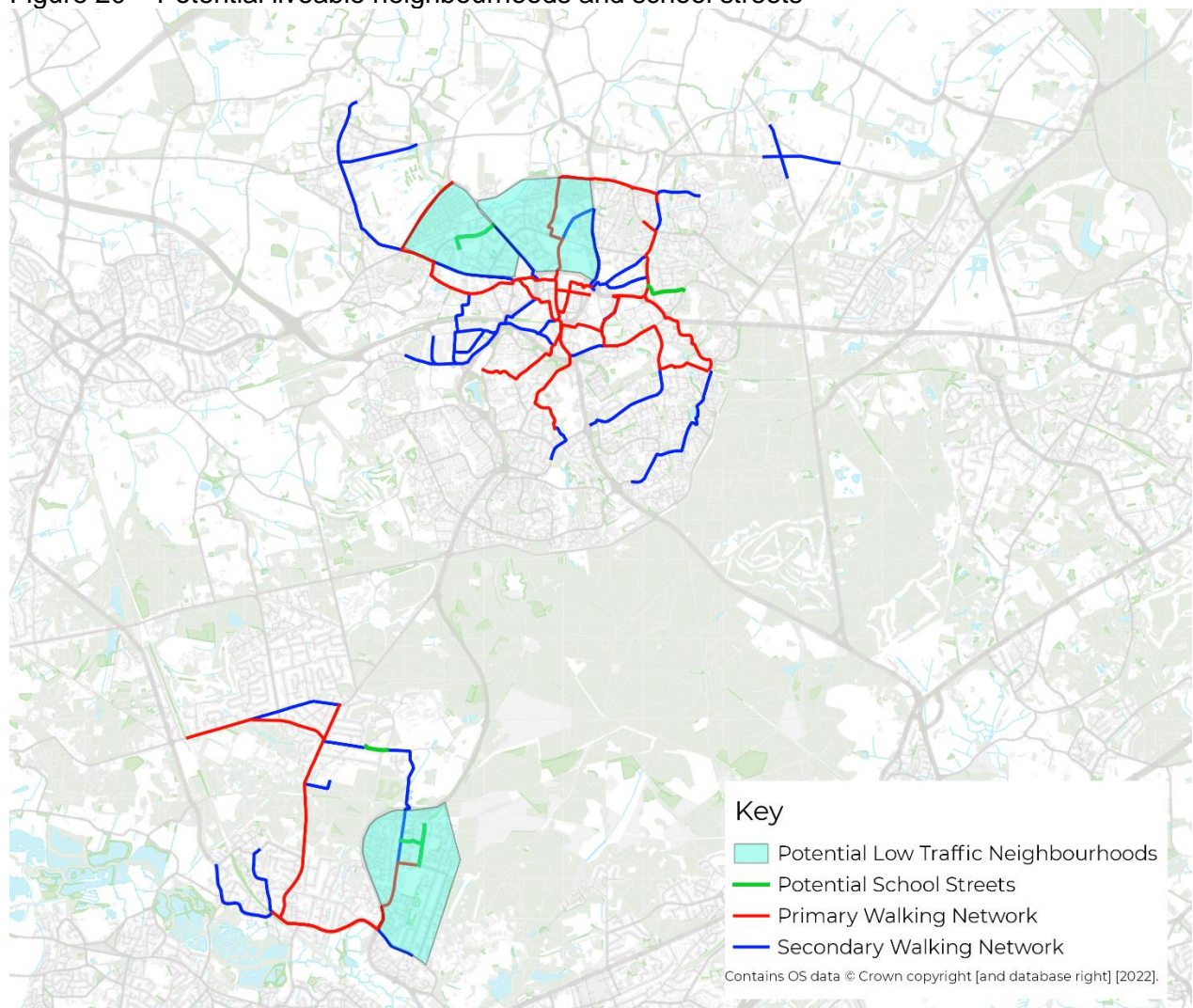
Two potential school streets have been identified within the liveable neighbourhoods boundaries these are on Moordale Avenue which will provide safer pedestrian and cyclist accessibility to Meadow Vale Primary School. The second is in Owlsmoor, on Cambridge

Road and Church Toad; covering Owlsmoor Primary School and Little Owls Community Preschool.

Outside of the liveable neighbourhoods, we have proposed further school streets north east of Bracknell town centre, on Lily Hill Rd, where Holly Spring Primary School and Little Blossoms Childcare Ltd are situated. There is also an additional school street proposed just north of Owlsmoor on the section of Lower Broadmoor Road where Wildmoor Heath School is located.

As can be seen, we have focused on the primary and secondary walking networks when proposing both the liveable neighbourhoods and the school streets as these demarcate areas where people are most likely to switch to active transportation.

Figure 20 – Potential liveable neighbourhoods and school streets



Chapter 5 – Investment prioritisation and cost estimation

Overview

Stage 5 of the Local Cycling and Walking Infrastructure Plan (LCWIP) process, as detailed in the Department for Transport's (DfT) LCWIP Technical Guidance, relates to the prioritisation of cycling and walking infrastructure improvements. The key output of this stage is a prioritised programme of these improvements.

The Guidance states that priority should be given to improvements that are likely to have the greatest impact in increasing the number of people who choose to cycle or walk, therefore providing the largest benefit from the investment.

To determine LCWIP priorities at a local level, many authorities have appraised their identified improvements against specific objective criteria. This process has typically been undertaken using a spreadsheet tool. This presents a simple and transparent means of 'scoring' LCWIP improvements for informing local decision-making on where to prioritise investment.

WSP has been requested to consider how concept improvements identified through the Bracknell Forest LCWIP could be effectively prioritised. This note provides a brief overview of one proposed approach that could be implemented once the final selection of concept improvements within the LCWIP is confirmed.

Approach

We propose an approach to prioritisation that applies an agreed set of assessment criteria to individual route or area-based improvements. It is firstly assumed that central Government funding rounds, such as the Active Travel Fund, will provide the main (but not the sole) source of future funding for LCWIP schemes. Therefore, the assessment criteria chosen will aim to identify and prioritise LCWIP improvements more likely to secure funding.

The assessment of LCWIP improvements will be at route level (e.g. a cycle route from A to B) or area-based (e.g. a Liveable Neighbourhood in Location A), rather than being disaggregated down to prioritising sections of route, or very specific localised interventions. This is due to the fact improvements are likely to be bought forward as part of a single complete and coherent route-based scheme, or Liveable Neighbourhood proposal. This aligns with the LCWIP Guidance, which states that prioritisation should consider a complete package of improvements.

The approach will use a Multi-Criteria Appraisal Tool (MCAT) which, once populated, will create a ranked list of LCWIP improvements across the borough, indicating which may be best aligned to future funding rounds. The MCAT will be created in Microsoft Excel. The tool will allow improvements to be scored against a set of 'prioritisation criteria'. Further explanation is provided in the following sections.

Criteria within the MCAT could be changed at any future point, and the assessment re-run, should the council wish to prioritise LCWIP improvements differently, such as against different policy objectives or funding requirements.

Scoring criteria

Schemes will be allocated a score in the 0 - 3 range for the criteria shown, based on WSP's interpretation of improvements and local input from BFC. Table 2 outlines the full scoring criteria suggested as a starting point for the MCAT. It is assumed this may be an iterative process and require discussions and clarification to ensure a fair and accurate understanding and interpretation

Costing Exercise

A high level costing exercise was undertaken for each of the schemes, looking at the typical costs per km for walking and cycling schemes and number of new junction improvements and crossing upgrades/installations.

Additional indirect costs and uplifts were included within the costings process, these are shown below.

Indirect cost uplifts

Provision for Diversion of Existing Services	20%
Prelims, Traffic Management & Overheads & Profit	45%
Design & Contract Management	20%
Risk / Contingency	30%
Assumed construction inflation	0.50%

Cycling Schemes:	£56,655,748
Walking Schemes:	£25,661,438
Total Cost:	£82,317,186*

*Costings are subject to change.

Prioritising cycling schemes

The primary output will be a completed and populated MCAT, with each LCWIP improvement scored, by typology, resulting in a prioritised, ranked order for all proposals being considered for future funding.

This output can then form the basis for further discussion locally on which to advance through further stages of design and consultation with a view to comprising a future ATF scheme funding package.

The table opposite shows the criteria used to assess the cycle routes. Each route was scored 0-3 for each criterion, using a detailed MCAT which outlined thresholds for each of the scores. Metrics influenced by route length were calculated on a per km basis to remove any length bias. Once scores for each criterion were calculated, the weighting of scores was changed to reflect BFC policy and strategic objectives.

A percentage score was calculated for each route based on total score compared with the maximum obtainable score. This produced a ranked list of priority cycling and walking routes shown over the next two pages.

	Criteria	Description
1	Forecast increase in walking/cycling (Commuter)	Length weighted average of the forecast number of journeys to work using the corridor in the Government Target Near Market scenario (LSOA)
2	Forecast increase in walking/cycling (Education)	Length weighted average of the forecast number of journeys to school using the corridor in the Government Target Near Market scenario (LSOA)
3	Forecast increase in walking/cycling (WSP Model)	Length weighted average of the forecast number of journeys based on WSP Model Outputs
4	Catchment Population	Population within the corridor (500m radius)
5	Existing Infrastructure condition	Degree of deficiency of the existing infrastructure
6	Alignment with existing network	Does the route connect with existing / proposed routes? This includes cross boundary routes
7	Road Safety	Number of KSI collisions per km in the previous 5 years within the corridor (50m radius)
8	Primary Schools	Number of schools within the corridor (a 500m radius)
9	Secondary Schools	Number of schools within the corridor (a 500m radius)
10	Major Employment site	Connectivity to existing or proposed major employment sites
11	Rail Connections	Does the route connect with any parallel schemes or other planned rail improvement?
12	Carbon / Air quality	Does the route travel through an Air Quality Management Area?
13	Development sites	Scale & proximity of sites with planning permission and/or allocated development sites
14	Cost of construction	Total scheme cost estimates for package of interventions
15	Maintenance costs	Maintenance requirements along the corridor
16	Scheme feasibility	Includes dependency on other schemes
17	Political and public acceptability	Likelihood of political and public support or opposition to the scheme
18	Stakeholder support	Likelihood of stakeholder support or opposition for the scheme based on Commonplace findings

Priority cycle routes

The table below shows a ranked list of priority cycle routes based on performance in the MCAT.

On the assumption that 1 cycle route could be delivered per year, indicative timescales are shown below for cycle route delivery, based on the ranking of cycle routes.

Short term (1-3 years)

- > C2 - Sandhurst to Bracknell
- > C5 - Binfield to Ascot
- > C6 - Bracknell Station to Harvest Ride

Medium term (3-6 years)

- > C8 – Twin Bridges to Jiggs Lane
- > C3 – Bracknell to Wokingham
- > C7 – Bracknell towards Windsor

Long term (6+ years)

- > C9 – Crowthorne to Sandhurst
- > C1 – Blackwater to Sandhurst
- > C4 – Woodhurst to Wokingham

Note the LCWIP is a live document and rankings may change

Route	Effectiveness	Policy	Economic	Deliverability	% Score
C2	11	15	0	2	52%
C5	10	11	0	6	50%
C6	10	12	0	5	50%
C8	13	10	0	4	50%
C3	8	13	0	5	48%
C7	5	10	0	3	33%
C9	7	8	0	3	33%
C1	8	4	0	5	31%
C4	3	6	0	7	30%

Prioritising walking schemes

The table below shows the criteria used to assess the walking routes. Each route was scored 0-3 for each criterion, using a detailed MCAT which outlined thresholds for each of the scores. Metrics influenced by route length were calculated on a per km basis to remove any length bias. Once scores for each criterion were calculated, the weighting of scores was changed to reflect BFC policy and strategic objectives.

	Criteria	Description
1	Forecast increase in walking/cycling (WSP Model)	Length weighted average of the forecast number of journeys based on WSP Model Outputs
2	Catchment Population	Population within the corridor (500m radius)
3	Existing Infrastructure condition	Degree of deficiency of the existing infrastructure
4	Alignment with existing network	Does the route connect with existing / proposed routes? This includes cross boundary routes
5	Road Safety	Number of KSI collisions per km in the previous 5 years within the corridor (50m radius)
6	Primary Schools	Number of schools within the corridor (a 500m radius)
7	Secondary Schools	Number of schools within the corridor (a 500m radius)
8	Major Employment site	Connectivity to existing or proposed major employment sites
9	Rail Connections	Does the route connect with any parallel schemes or other planned rail improvement?
10	Carbon / Air quality	Does the route travel through an Air Quality Management Area?
11	Development sites	Scale & proximity of sites with planning permission and/or allocated development sites
12	Cost of construction	Total scheme cost estimates for package of interventions
13	Maintenance costs	Maintenance requirements along the corridor
14	Scheme feasibility	Includes dependency on other schemes
15	Political and public acceptability	Likelihood of political and public support or opposition to the scheme
16	Stakeholder support	Likelihood of stakeholder support or opposition for the scheme based on Commonplace findings

Priority walking routes

The table below shows a ranked list of priority walking routes based on performance in the MCAT.

On the assumption that 1 walking route could be delivered per year, indicative timescales are shown below for walking route delivery, based on the ranking of walking routes.

Short term (1-3 years)

- > W8 – London Road to Whitegrove Close
- > W11 – Bracknell Station to Shepherds Lane
- > W13 – Woodhurst to Western Business Area

Medium term (3-6 years)

- > W3 – Sandhurst Station to Owlsmoor
- > W9 – Bracknell High Street
- > W10 – Bracknell High Street

Long term (6+ years)

- > W2 – Sandhurst Station to Crowthorne
- > W4 – Bracknell Station to Wildridings Road
- > W5 – Bracknell Station to South Hill Road
- > W12 – Shepherds Lane to North Bracknell Retail Park

Note the LCWIP is a live document and rankings may change

Route	Effectiveness	Policy	Economic	Deliverability	% Score
W8	12	21	6	9	56%
W11	7	10	4	6	52%
W13	9	6	4	6	52%
W3	6	12	0	7	50%
W9	5	12	0	7	50%
W10	6	7	6	5	50%
W2	6	6	6	6	48%
W4	5	13	0	5	48%
W5	8	7	4	4	48%
W12	7	10	2	4	42%
W1	7	7	2	4	38%
W7	4	8	2	4	38%
W6	6	5	2	5	35%

Chapter 6 – Integration and application

Stage 6 of the LCWIP process considers how the Bracknell Forest LCWIP will be integrated into local policy and strategies.

Governance

An LCWIP project team has been established consisting of officers from Bracknell Forest Council, with technical assistance provided by WSP in the development of the LCWIP in 2022.

Stakeholder engagement and consultation

Effective engagement with stakeholders is integral throughout the development and delivery of an LCWIP to provide the opportunity for local people to express their views and input to the proposals.

The LCWIP will be consulted on as part of Bracknell Forest's Local Transport Plan 4. This will ensure that all relevant issues are considered when identifying interventions and it should increase support for the LCWIP.

Integration, funding and scheme delivery

The delivery group will be responsible for the integration of the LCWIP outputs in to local policy. This will help ensure that emphasis is given to cycling and walking within both local planning and transport policies, strategies and delivery plans. Reflecting the LCWIP in local policy will also help to make the case for central government funding.

They will seek to identify appropriate funding sources to deliver the aspirations of Bracknell Forest LCWIP. This will include local contributions, developer contributions, central government funding opportunities such as ATF4 and other innovative funding mechanisms as appropriate to the scale of improvements.

Monitoring and evaluating the benefits of investment in delivering the LCWIP schemes will be critical, and will enable BFC to make the case for future investment in our streets.

The schemes outlined in this document represent almost XX investment in high-quality cycling and walking routes. This demonstrates a step-change in the focus on active travel in Bracknell Forest but delivery of the plan will be highly dependent on successful funding bids to central government and developer contributions as planning applications come forward.

The priority improvements identified will deliver a range of benefits to public health, local economy and tourism, land value uplift, decongestion, road safety and carbon savings – all of which are expected to be significant. Most walking and cycling schemes represent very good value for money, providing greater benefit to society than the cost of the scheme.

It is anticipated that LCWIPs will be reviewed every 3 to 5 years to reflect progress made. LCWIPs 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.