West Northamptonshire Council

Brackley Local Cycling and Walking Infrastructure Plan

Draft Technical Report for Consultation

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PJA
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Contents

List of Tables

List of Figures

Appendices

1 Executive Summary

1.1.1 PJA have produced a Local Cycling and Walking Infrastructure Plan (LCWIP) for Brackley on behalf of West Northamptonshire Council so that future investment in cycling infrastructure can be informed by a coherent vision of how cycling can contribute to the overall transport mix in the area. The plan is cognisant of significant housing growth planned in Silverstone and Brackley and of the potential for HS2 to increase severance between Brackley and settlements to the north.

1.1.2 Two key strands were identified to support West Northamptonshire Council's ambitions to increase levels of walking and cycling in and around Brackley:

- an LCWIP for the town of Brackley; and
- inter-urban routes to improve connectivity to towns and villages surrounding Brackley.

1.1.3 The LCWIP analysis demonstrated that a combined walking and cycling network was the most appropriate approach for Brackley due to its compact, walkable nature. A series of prioritised design clusters for delivery of combined walking and cycling improvements in the town were recommended. The clustered approach concentrates on key areas such as Manor Road and Market Place which require better infrastructure that will enable more people to choose to walk and cycle within the town.

1.1.4 In addition to the priority clusters, a town-wide programme of quick wins could be delivered based on themes such as improving signage and wayfinding or improving priority junctions.

1.1.5 The wider connectivity assessment highlighted potential alignments to develop as future cycling routes between Brackley and surrounding settlements. This study identifies five priority links with additional spurs and alternative routes. The routes could be delivered in their entirety or could be used to inform localised improvements as opportunities arise such as during planned road and PROW maintenance or to secure developer contributions during the planning process.

2 Introduction

2.1 Introduction to Study

2.1.1 In 2021 PJA produced a 'Local Cycling and Walking Infrastructure Plan (LCWIP) Lite' for Brackley. This was largely desktop-based exercise focused on the early stages of the LCWIP process including:

- Propensity to Cycle Tool analysis to identify key routes within Brackley and key 'inter-urban' routes
- Identification of key barriers to walking and cycling
- High level indicative proposals

2.1.2 Following the completion of the study, West Northamptonshire Council commissioned PJA to undertake the remaining stages of the LCWIP for Brackley in order to produce a 'full LCWIP'. The additional elements required to take the LCWIP Lite to a full LCWIP include:

- Additional data analysis, particularly for local "everyday" trips by walking and cycling within Brackley to identify the core walking zone(s) and key walking routes;
- Pre-sifting of inter-urban routes (to identify up to three priority routes);
- Stakeholder engagement;
- Route audits;
- Identification and prioritisation of proposals within Brackley; and
- High level cost estimates.

2.1.3 There are two key strands to the study:

- Walking and cycling measures within Brackley itself (the core LCWIP)
- Inter-urban routes between Brackley and key surrounding settlements.

2.2 Report Structure

2.2.1 This report combines the policy review and initial analysis from the 'LCWIP Lite' with the additional analysis and audit work undertaken for the 'full LCWIP' to provide a comprehensive network review. The report structure presents the findings from each of the individual project strands – the core LCWIP for Brackley and the inter-urban routes - and concludes at the end with a recommended approach for the overarching delivery of the project.

3 Study Context

3.1.1 This chapter summaries the context for this study with particular focus on the policy framework and major developments proposed in the area.

3.2 National Policy Context

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

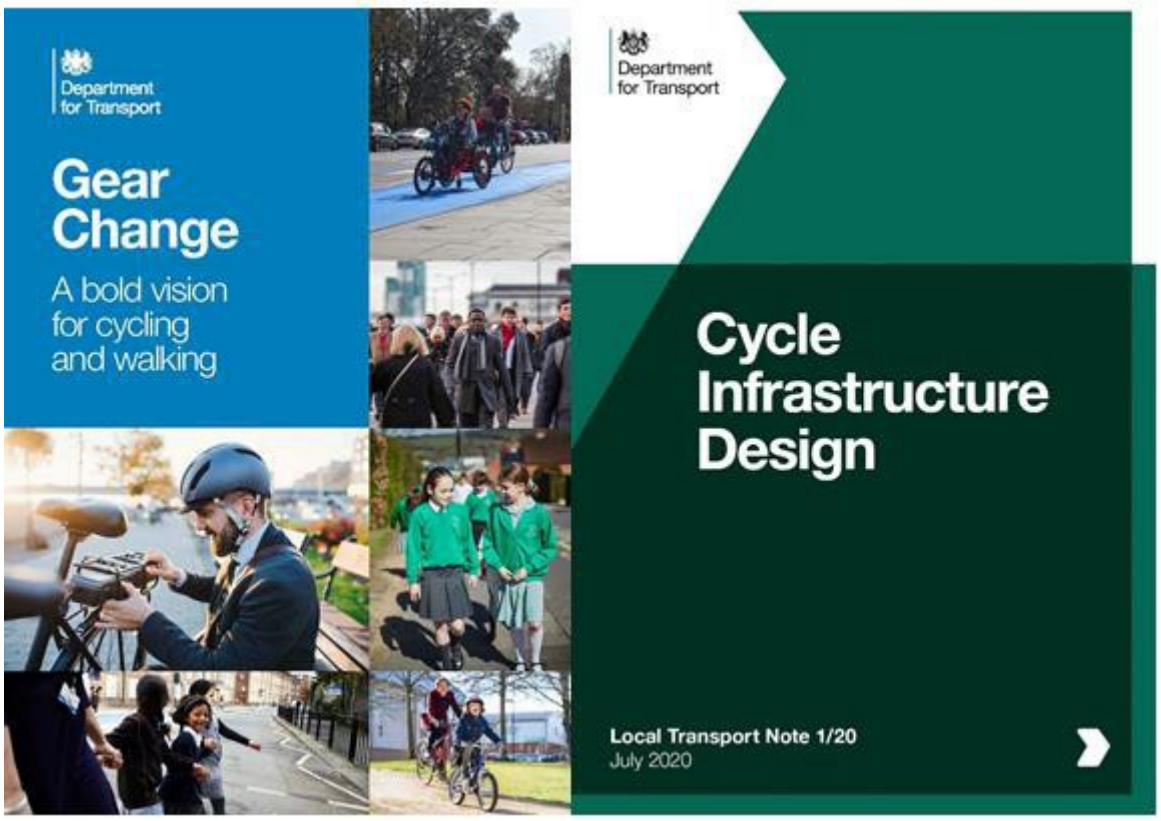

Figure 3-1: Gear Change and LTN 1/20 were both published in 2020 outlining significant investment and changes in walking and cycling

Gear Change (2020)

3.2.2 The Cycling and Walking Plan for England, 'Gear change: a bold vision for cycling and walking', was published on 27 July 2020. The plan sets out the government's shift in transport policy: to prioritise active travel over single-occupancy private vehicles.

3.2.3 The plan set the following vision:

> "Places will be truly walkable. A travel revolution in our streets, towns and communities will have made cycling a mass form of transit. Cycling and walking will be the natural first choice for many journeys with half of all journeys in towns and cities being cycled or walked by 2030."

3.2.4 The plan recognises the need to take action to tackle the barriers to active travel, providing better quality infrastructure to make sure people feel safe and confident cycling. To receive Government funding for local highways investment where the main element is not cycling or walking improvements, there will be a presumption that all new schemes will deliver or improve cycling infrastructure to the new standards unless it can be shows that there is little or no need for cycling.

3.2.5 The plan also recognises the need to reduce rat-running on residential side streets through more low traffic neighbourhoods (LTNs) as well and creating cycle, bus and walking corridors by closing a limited number of main roads to through traffic except for buses and access.

LTN 1/20 – Cycle Infrastructure Design (2020)

3.2.6 The Department for Transport's recently published Cycle Infrastructure Design - Local Transport Note 1/20 establishes much higher standards for cycling infrastructure including geometric requirements.

3.2.7 Rather than a strict set of standards or a "one size fits all" approach, LTN1/20 encourages designers to consider the context when designing cycling infrastructure. For example, it identifies what level of protection from motor traffic is appropriate based on the speed and volume of traffic, noting these are not fixed. For example, it makes specific reference to physical and legal measures to control access and motor vehicles speeds and notes that such measures can bring wider environmental benefits by reducing noise, air pollution and traffic danger. It notes:

> 'Encouraging through-traffic to use main roads can provide benefits for pedestrians and residents, particularly children and vulnerable adults, as well as enabling cycling. This can be achieved through implementing measures such as turning bans, one-way streets, and by modal filtering … These measures also have the benefit of making short journeys quicker on foot or cycle compared to driving, providing a disincentive to using a car for short trips'.

Local Cycling and Walking Infrastructure Plans (LCWIP) (2017)

3.2.8 LCWIPs were first set out in the Government's Cycling and Walking Strategy (CWIS). LCWIPs are intended to provide local authorities with a long-term approach for developing walking and cycling networks, ideally over a ten-year period. The development of an LCWIP should include desktop analysis of existing and future behavioural trends, site auditing of existing conditions for walking

and cycling, and prioritisation of recommended design measures. The key outputs from an LCWIP are:

- Network Plan for Walking and Cycling identifying preferred cycling routes and walking zones for development
- Programme of prioritised infrastructure improvements
- Report summarising the work undertaken to inform the LCWIP network development

3.2.9 The DfT's LCWIP guidance provides a recommended approach to developing LCWIPs however their intention is that LCWIPs respond to local conditions and requirements to improve walking and cycling networks.

Highways England Cycling Strategy (2016)

3.2.10 Highways England operate the A43 all-purpose trunk road, which is signed as a cycle route. Their strategy includes a commitment to make improvements as part of the RIS and when undertaking other works:

"Ensure that wider network investments incorporate cycling facilities. For example, when we invest in road network improvements, the needs of cyclists will be considered, both during construction and as part of any completed scheme. Also, as we invest in network maintenance, we will consider opportunities to improve cycle provision."

3.3 Local Policy Context

3.3.1 This chapter briefly summarises the policy framework for the local area and outlines how this might influence the LCWIP.

South Northamptonshire Local Plan (Part 2) (2020)

3.3.2 The South Northamptonshire Local Plan (Part 2) was adopted in July 2020. The Local Plan forms part of the Development Plan and will guide planning decisions in the area.

3.3.3 The Local Plan notes that the South Northamptonshire Area is a great place to live, work and invest, due to its two successful market towns (also identified as rural service centres) of Brackley and Towcester, Silverstone circuit supporting the High-Performance Technology and Motorsport Engineering sector, and surrounding landscape and villages, many of which contain conservation areas.

3.3.4 The Local Plan identifies several major growth sites including Brackley Turweston Road North, Towcester South and Silverstone Park. It also notes that the South Northamptonshire Retail Study

(WYG 2018) advised there was scope for Brackley to improve its vitality and viability with a range of environmental improvements and other actions identified.

West Northamptonshire Joint Core Strategy (2014)

3.3.5 The West Northamptonshire Joint Core Strategy (adopted 2014) outlines the following housing delivery for Brackley and Towcester:

Settlement	Delivery Requirement	Completions 2011-2018	Commitments 2018-2029	Residual
Brackley	2,160	915	1,213	32
Towcester	2,650	362	1,797	491
Rural areas	2,360	1,821	916	-377
Total	**7,170**	**3,098**	**3,926**	**146**

Table 3-1: Housing delivery against planned delivery requirement

3.3.6 The Joint Core Strategy contains a number of policies relevant to the study.

3.3.7 **Policy S5 – Sustainable urban extensions -** outside the existing urban areas development will be focused on sustainable urban extensions to the urban areas including 2,100 dwellings and 10.8 HA employment in Towcester South, 350 dwellings and 9.4 HA employment in Brackley East and 1,380 dwellings in Brackley North.

3.3.8 **Policy C5 – Enhancing local and neighbourhood connections –** The connections within urban areas, between neighbourhoods and town and district centres, or the rural hinterlands of West Northamptonshire with their most accessible service centre, will be strengthened by measures including improvements to cycling networks and cycle parking and securing and enhancing urban and rural walking networks.

3.3.9 **Policy E5 - Silverstone Circuit -** To support the circuit as an international venue for motorsport further employment, tourism, education and leisure development at Silverstone Circuit will make provision for:

- 40 ha advanced technology park comprising b1/ b2 and b8 uses (approximately 50% in Aylesbury Vale district);
- 25 ha of additional b1 - b8 employment (entirely in Aylesbury Vale district);
- 8 ha of tourism uses comprising up to 3 hotels; (2 hotels in Aylesbury Vale district)
- 35 ha leisure/ conferencing/ exhibition/ sports space comprising d1/ d2/ a3/ a1/ b1 and sui generis uses; (10 ha in Aylesbury Vale district) and
- 14 ha education campus (entirely in Aylesbury Vale district).

All proposals will need to demonstrate functional links to the towns of Towcester and Brackley in particular by strengthening sustainable transport links between the circuit and the towns.

3.3.10 **Policy B1 - Spatial strategy for Brackley -** The role of Brackley as a rural service centre will be supported and enhanced by the following development and other proposals:

- Housing development within the existing urban area and as part of the Brackley east and Brackley north sustainable urban extensions.
- Employment development through regeneration and renewal within the Brackley business district: employment area (see proposals map, figure 5) and as part of the Brackley east sustainable urban extension.
- Additional services and facilities provided through the regeneration of the Brackley business district: town centre and the development of the sustainable urban extensions.
- A comprehensive package of measures to promote the vitality of the town centre, enhance linkages and improve town centre parking.
- Improvements to public transport, cycling and walking facilities within the town.
- Health provision including a new primary healthcare centre and a 60-bed unit for elderly care.
- Enhanced green infrastructure networks and protection of the valued natural features of the town.

3.3.11 **Policy B2 - Brackley East sustainable urban extension** - The Brackley East sustainable urban extension will provide 380 dwellings and 1000 jobs. It will include realignment of and traffic calming to Turweston Road, Improved public transport provision, the enhancement of local green infrastructure networks and safe routes for pedestrians and cyclists.

3.3.12 **Policy B3 - Brackley North sustainable urban extension -** The Brackley North sustainable urban extension will provide 1380 dwellings and a new primary school. It will include a local centre, comprising retail (up to 1000 sqm net floorspace) and community facilities (up to 500 sqm net floorspace), an integrated transport network with sustainable transport modes including access to Brackley business district and safe routes for pedestrians and cyclists.

3.3.13 **Policy B4 - transport improvements for Brackley -** To support accessibility and sustainable transport within Brackley the local authorities will:

- Support improvements to the connectivity of Brackley to the wider A43 network including enhanced public transport connections with Silverstone Circuit;
- Secure junction improvements to the A43;
- Support improvements to the cycling network within and around the town;
- Promote walking and cycling within the town as an alternative to car journeys;

- Ensure parking provision meets the needs of the town; and
- Improve bus facilities.

Brackley Masterplan (2011)

3.3.14 The Brackley Masterplan was adopted in January 2011 and provides a vision for Brackley up to 2026. The masterplan identified many transport and movement improvements for pedestrians and cyclists including:

- Provide new pedestrian crossings at strong desire lines within the town.
- Enhance the environment for pedestrian and cyclists including narrowing Market Place/ High Street.
- Provide covered, visible and secure cycle racks in the town centre.
- Explore the potential to create safe and attractive pedestrian and cycle linkages to other nearby settlements.

3.3.15 It is unclear how many, if any, of these improvements have been delivered to date.

Northamptonshire Transportation Plan (2012)

3.3.16 The Northamptonshire Transportation Plan was adopted in March 2012 and is the overarching strategy document that sets out what the former Northamptonshire County Council's strategic aims and goals are for transportation in Northamptonshire. The Transportation Plan states that its overall aim is to create a network that is 'fit for purpose', "delivering exactly what Northamptonshire needs to be able to function plus what it needs to be able to grow, no more and no less."

3.3.17 It identifies several objectives: the future, community, choice, economic growth, environment and best value.

3.3.18 One of the priorities identified in the plan is to make public transport and cycling more attractive and encouraging and incentivising low-carbon travel and the policies to improve walking and cycling include:

3.3.19 Strategic Policy 2 - We will support the introduction of effective and attractive sustainable transport options that will encourage lasting modal shift in Northamptonshire. We have set two targets for modal shift, based on 2001 Census journey to work data, to achieve by 2031: A reduction of 5% in single occupancy car journeys to work from the existing built up areas of the towns A reduction of 20% in single occupancy car journeys to work from new developments.

3.3.20 Strategic Policy 3 - We will ensure that all new developments are well connected by public transport and walking, cycling and motor vehicles routes, to the existing transport network or one that can

be reasonable expected to be created – this will allow ease of movement between the development and existing built up areas and provide access to employment and key services.

3.3.21 Strategic Policy 12 - We will work with communities to identify initiatives as part of an integrated approach to road safety that will aim to reduce casualties and take opportunities to support healthier lifestyles through active travel, promoting modal shift, the Safer Routes to School Programme and walking and cycling schemes.

3.3.22 Strategic Policy 14 - We will work with partners to improve the walking, cycling and public transport infrastructure to make options available for people to travel in Northamptonshire.

Northamptonshire Cycling Strategy (2013)

3.3.23 The Northamptonshire Cycling Strategy was adopted in January 2013. It sets out the overarching vision for cycling within Northamptonshire and the strategy to achieve it.

3.3.24 The strategy is one of a series of thematic daughter documents to the Northamptonshire Transportation Plan adopted in 2012. The Brackley Town Strategy is one of several spatial daughter documents and is also relevant to this study as transport is a key theme.

3.3.25 The vision for cycling covers both shorter, local utility journeys as well as leisure purposes. The strategy recognises the potential for more cycling to bring significant benefits including reducing congestion, cutting carbon emissions, creating healthier communities and contributing to economic prosperity.

3.3.26 The strategy acknowledges that current cycling levels are low with cycle mode share for journeys to work around 2% but notes there is significant potential:

"The compact nature of the towns and in most cases relatively flat topography, presents significant potential to increase cycling trips within the major towns through addressing key missing links and junction treatment. In addition, there are opportunities, if sufficient funding became available, to develop inter-urban links between the main towns and from smaller outlying settlements. The town networks are complemented by the National Cycle Routes 6 and 50 which run north to south through the county, which are used on the whole as leisure routes."

3.3.27 The strategy includes a few high-level policies and design standards regarding the width of facilities which generally align with current guidance in LTN1/20.

Brackley Town Transport Strategy (2013)

3.3.28 The former Northamptonshire County Council published the Brackley Town Transport Strategy in 2013. This document recognised that although most journeys within Brackley are currently

undertaken by car, most key amenities are less than 1 mile, meaning that many residents could access them by walking or cycling instead if suitable infrastructure is provided.

3.3.29 It also notes that there is currently a very limited amount of cycling infrastructure in Brackley, the few shared foot/cycleways are not linked, and there is limited signage.

3.3.30 However, there is an aspiration in the document to reduce the number of car trips and increase the number of journeys made by walking and cycling for short journeys:

"Car journeys for distances under 5 miles, has displaced people from cycling as the car has become the first thought for travelling. Cycling should be considered as the mode of choice for journeys fewer than 5 miles, with the correct infrastructure cycling would be a real alternative to use of the car and would enable access across Brackley."

3.3.31 The strategy includes several potential cycle schemes of mainly advisory on-carriageway cycle routes on the main roads and larger residential roads within the town as well as a small number of off-carriageway routes including links to settlements just outside Brackley such as Evenley and Turweston (see Figure 3-2). All routes are concept only with no funding attached. None of the routes have been delivered so far.

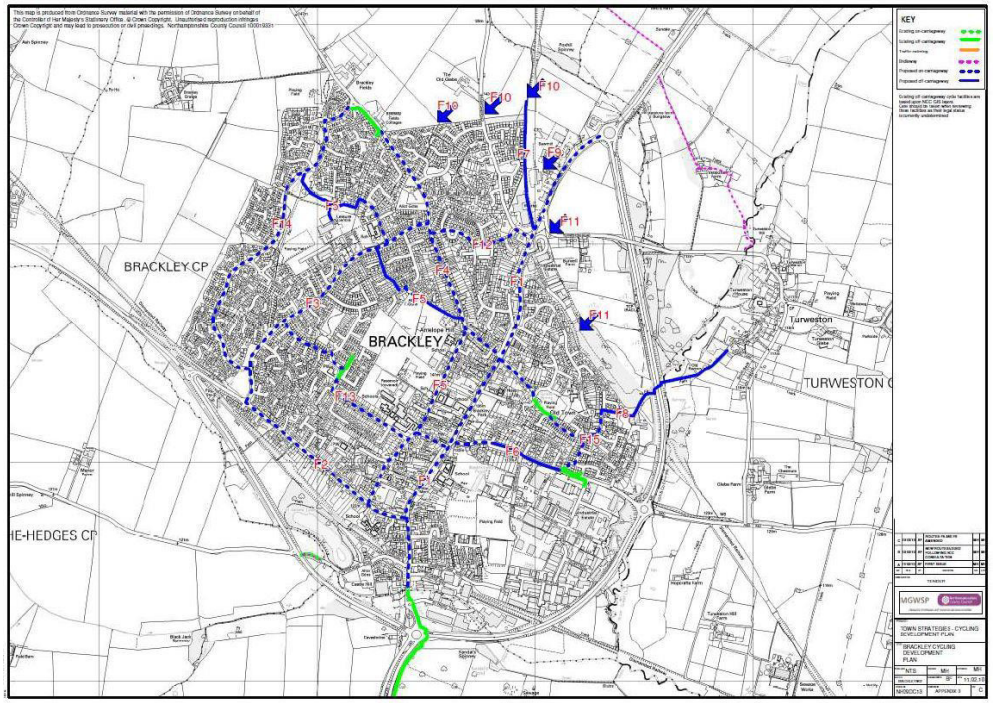

Figure 3-2: Brackley Town Transport Strategy - existing and proposed cycle network (2013)

3.3.32 The strategy also notes the link between active travel and car parking, noting that walking and cycling improvements would reduce the number of local people travelling by car, freeing up car parking spaces for visitors.

Oxford-Cambridge Arc Spatial Framework

3.3.33 In the 2020 budget, the government committed to developing, with local partners, a spatial framework for the Oxford-Cambridge Arc, an area that spans the five ceremonial counties of Oxfordshire, Northamptonshire, Buckinghamshire, Bedfordshire and Cambridgeshire. In February 2021 the Ministry of Housing, Communities & Local Government (MHCLG) published a policy paper "Planning for sustainable growth in the Oxford-Cambridge Arc: an introduction to the spatial framework" to set out the Government's plan for developing the spatial framework.

3.3.34 It notes that, by focusing on the strategic opportunities for growth and environmental improvement that cross local administrative boundaries, it is intended that the plan will:

- Support long-run sustainable economic growth across the area.
- Help to make the area a brilliant place to live, work and travel in – for existing residents and future communities alike.
- Support lasting improvements to the environment, green infrastructure and biodiversity.

3.3.35 For example, the policy paper states it will enable a more integrated approach to planning for new transport infrastructure alongside new development in order to support better, more sustainable planning and growth at the local level. This includes promoting sustainable transport, improving first and last mile connectivity around transport hubs, and better connecting communities, employers, employees, businesses, cultural attractions, nature and universities, including through public transport, cycling and walking.

Buckinghamshire Greenway

3.3.36 The Buckinghamshire Greenway is an emerging vision 'for a transformational walking and cycling route stretching from Milton Keynes and Brackley to Uxbridge and Heathrow Airport, forming the north-south spine of a future countywide walking and cycling network made up of a series of local links'.

3.3.37 The vision is for an accessible, high-quality long distance cycling route which will provide a world-class example of cycling infrastructure in a rural context.

3.3.38 The first phase of the route, a 4km traffic-free route between Aylesbury Vale Parkway Station and Waddesdon Manor, was completed in September 2018 and attracted over 70,000 trips within its first year of opening.

3.3.39 Research by Sustrans has demonstrated the value of cycle tourism in rural areas which can provide new incentives for people to visit an area and help support local businesses. It notes that long

distance cycle routes, which are predominantly rural, can generate as much as £30 million per year to the local economy; enough to sustain over 600 full time equivalent jobs. Examples include Coast 2 Coast (240,000 trips a year) and the Way of the Roses (130,000 trips a year), both in the north of England[1].

3.3.40 There is an aspiration in the Buckingham Transport Strategy (and originally identified in the HS2 National Cycleway Proposal) for traffic-free links between Buckingham and Brackley (and beyond to Banbury) and between Buckingham and Silverstone Park. The route between Buckingham and Brackley would be mainly off-road, following the alignment of a disused railway line (see Figure 3-3).

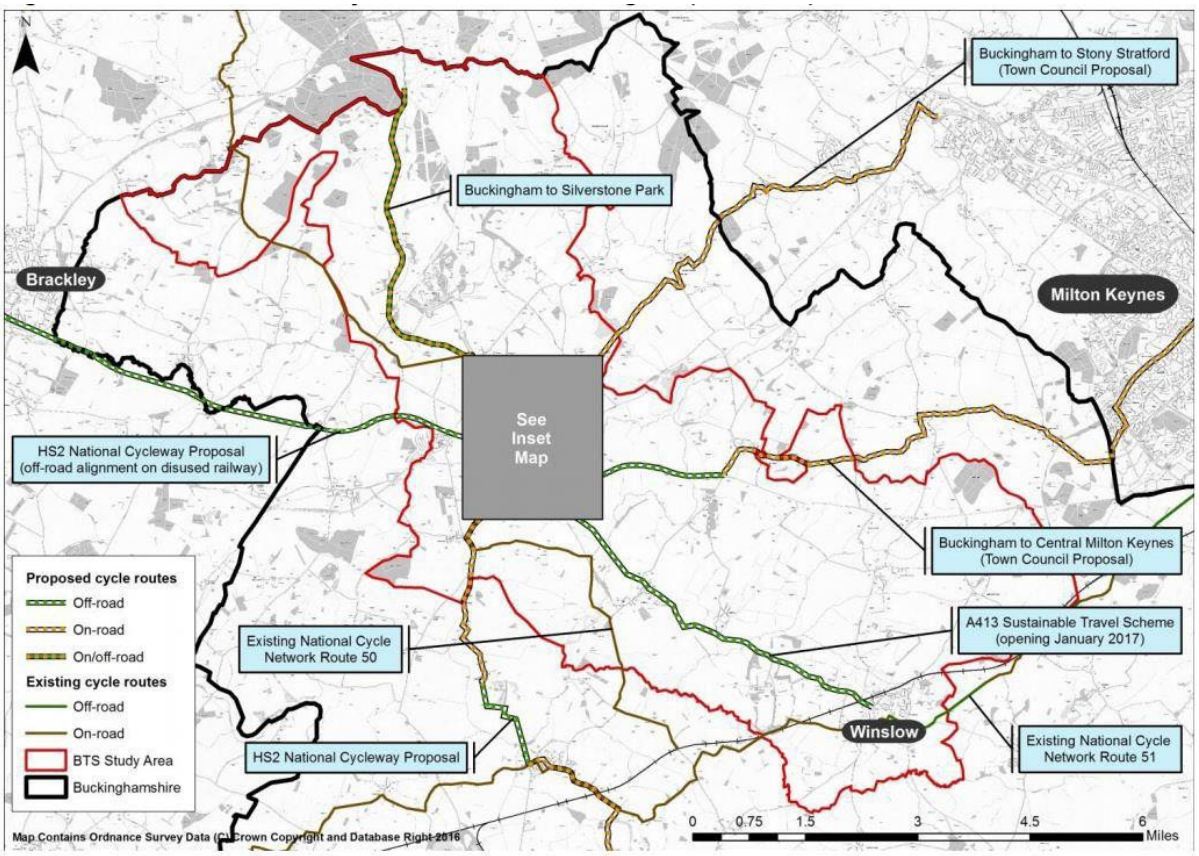

Figure 3-3: Buckingham Transport Strategy potential inter-urban cycle routes around Buckingham

HS2

3.3.41 HS2 is the Government's proposal for a new, high speed north-south railway. The proposal is being taken forward in two phases: Phase One will connect London with Birmingham and the West

[1] Sustrans (2017) Active Travel and Economic Performance: A 'What Works' review of evidence from cycling and walking schemes. https://www.sustrans.org.uk/media/4472/4472.pdf

Midlands and Phase Two will extend the route to Manchester, Leeds and beyond. On 23rd February 2017 Royal Assent was granted for Phase One of HS2, which comprises of a new high speed railway between London and the West Midlands.

3.3.42 HS2 will enter West Northamptonshire from Aylesbury Vale District to the south. HS2 crosses over the River Ouse and extends to the Boddington cutting to the west. The route in West Northamptonshire is approximately 21km in length beginning north of Turweston, and runs in a north-westerly direction past Brackley, Greatworth, Lower Thorpe, Chipping Warden and Lower Boddington. The route then continues in a north-westerly direction to the Stoneton Lane/Warwick Road junction where it leaves West Northamptonshire (see Figure 3-4).

3.3.43 The line will comprise a number of embankments, viaducts and cuttings and require some realignments of footpaths, drainage works and landscaping and these works are described in detail in the HS2 Context Report for West Northamptonshire.

3.3.44 HS2 will run just to the north of the A43/Northampton Road roundabout to the north-east of Brackley. This will require the installation of a new overbridge for the A43 to pass over the HS2 line which will accommodate a 2.5m shared use pedestrian and cycle facility.

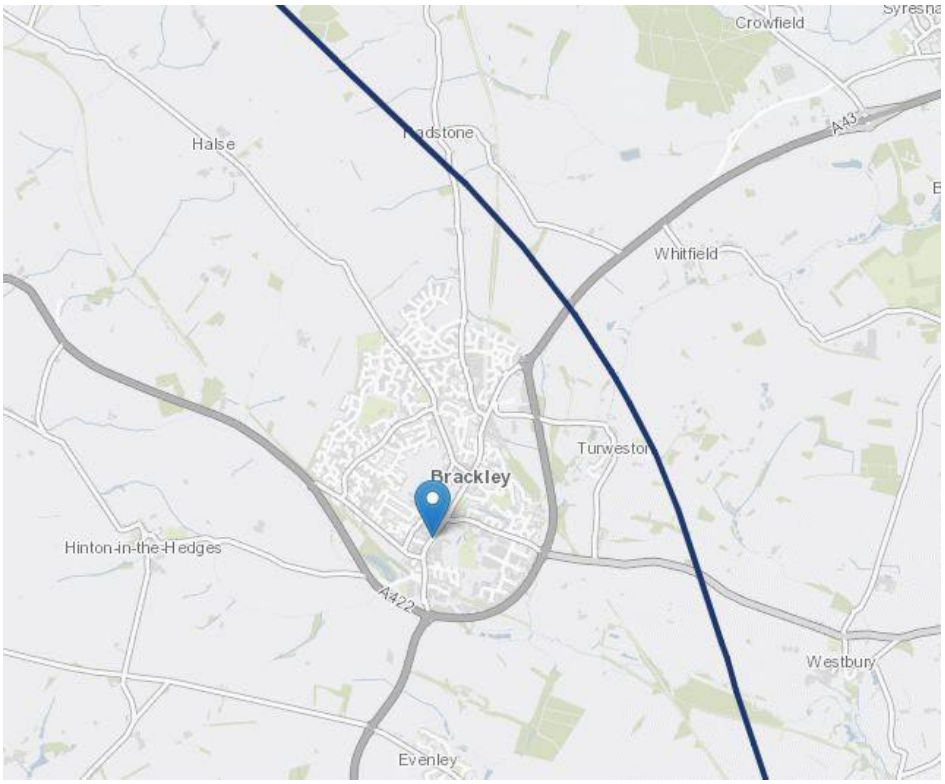

Figure 3-4: HS2 route

4 Brackley LCWIP

4.1 LCWIP process overview

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

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

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

4.1.2 LCWIPs should be evidence-led, and comprehensive. An LCWIP should identify a pipeline of investment so that over time, a complete cycling network is delivered at an appropriate geography (see step 1 – determining scope) and that walking and cycling improvements are delivered coherently, within core walking zones. The goal of an LCWIP should be to grow the use of cycling and walking, which means looking at routes and areas where more people could choose these modes in preference to other means of travel. Therefore, an LCWIP should consider travel demand regardless of mode, rather than looking just at existing walking and cycling trips. Given Brackley's size meaning virtually all journeys are walkable, and the analysis detailed below, walking and cycling have been considered together.

4.2 Local context

4.2.1 Brackley is still a relatively compact settlement, despite significant residential growth on the northern edge of the town in recent years. It is approximately 1 mile east to west and less than two miles from north to south meaning that walking (and, to a lesser extent, cycling) could be the natural choice for most journeys within Brackley if safe and attractive conditions were provided.

4.2.2 Figure 4-1 below illustrates the significant further development that is proposed, predominately to the north of the town while existing key destinations are clustered towards the south of the town in the historic core (see Appendix A for full page plans). It will therefore be increasingly important to provide intra-town walking and cycling facilities to integrate the new developments with the existing town in a sustainable way. Figure 4-1 also highlights how the town's relationship with the A43 Brackley Bypass is crucial as both an opportunity and threat for Brackley's future development. It provides an opportunity, as it should enable most of the through traffic to bypass the town which should make walking and cycling more attractive within the town. On the other hand, it presents a key barrier to movement around the south of the town meaning new development is increasingly severed from key destinations.

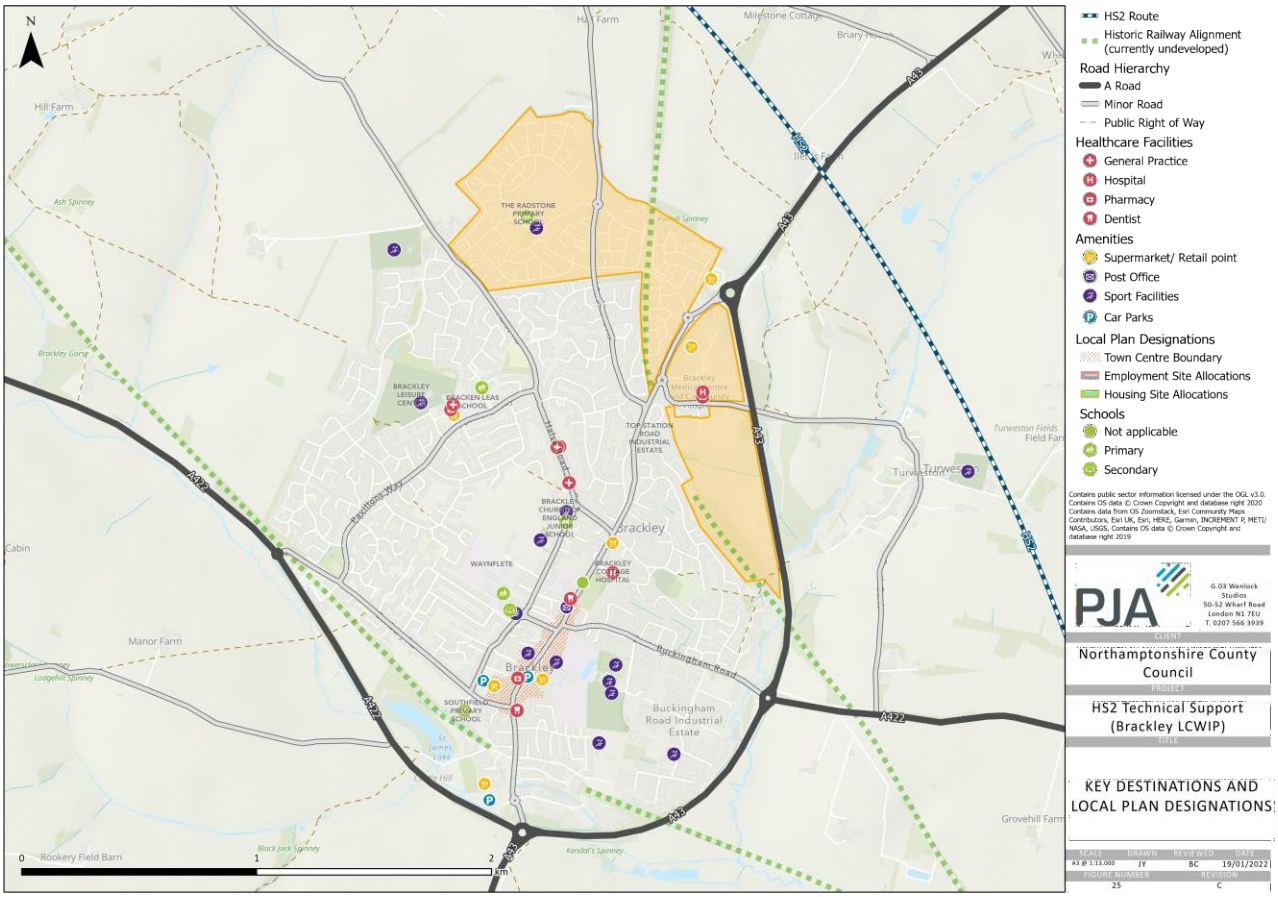

Figure 4-1: Brackley context plan showing key destinations and local plan designations

Traffic data

4.2.3 A review of locally and nationally held traffic counts identified a lack of traffic data for Brackley. Therefore, traffic data from a company called The Floow was purchased to inform the study. The Floow provides telematics data which provides estimated general traffic flows (calibrated with

existing traffic counts) which can help identify whether through traffic is an issue and gain a better understanding of traffic volumes across Brackley. This information can help inform which routes are already suitable for walking and cycling and indicate where measures are required.

4.2.4 Figure 4-2 confirms that the relief route is working as intended with the vast majority of through traffic utilising the relief road rather than driving through Brackley itself. This suggests that no additional measures are required to encourage through traffic to use the relief route.

4.2.5 However, as Figure 4-3 shows, there are higher than expected traffic flows on some residential streets, particularly in the north of town between Halse Road and Radstone Road such as Poppyfields Way (where The Radstone Primary School is located), Oak Road, Bridgewater Road and Ellesmere Road.

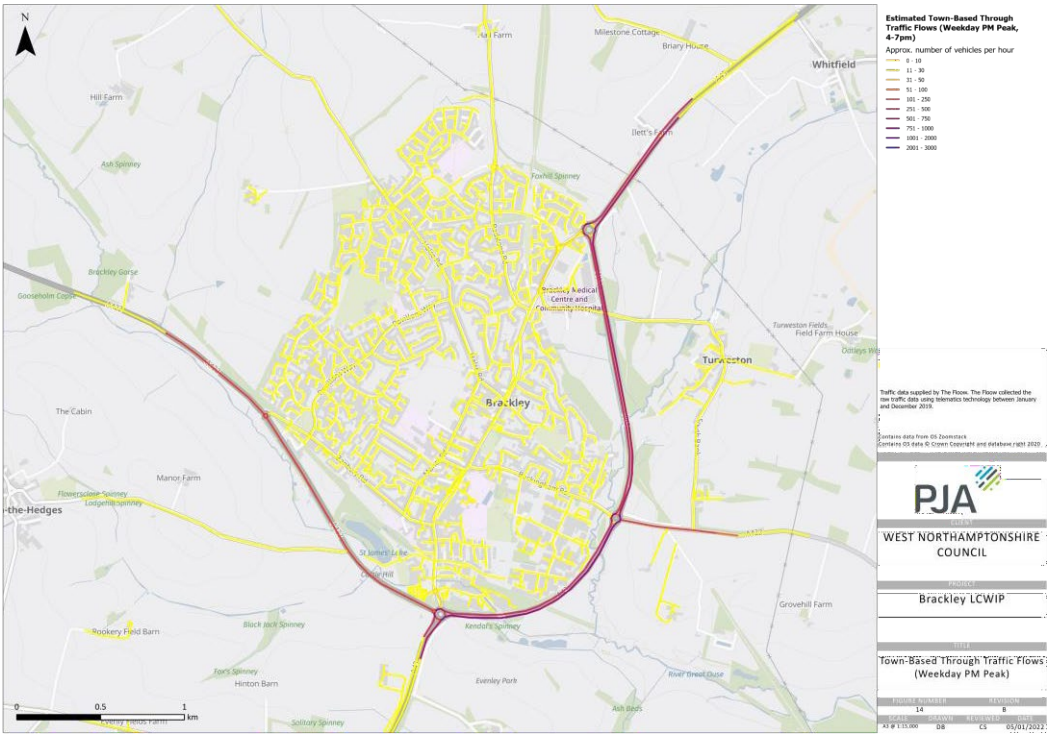

Figure 4-2: Estimated through-traffic in Brackley in the weekday PM peak (4-7pm)

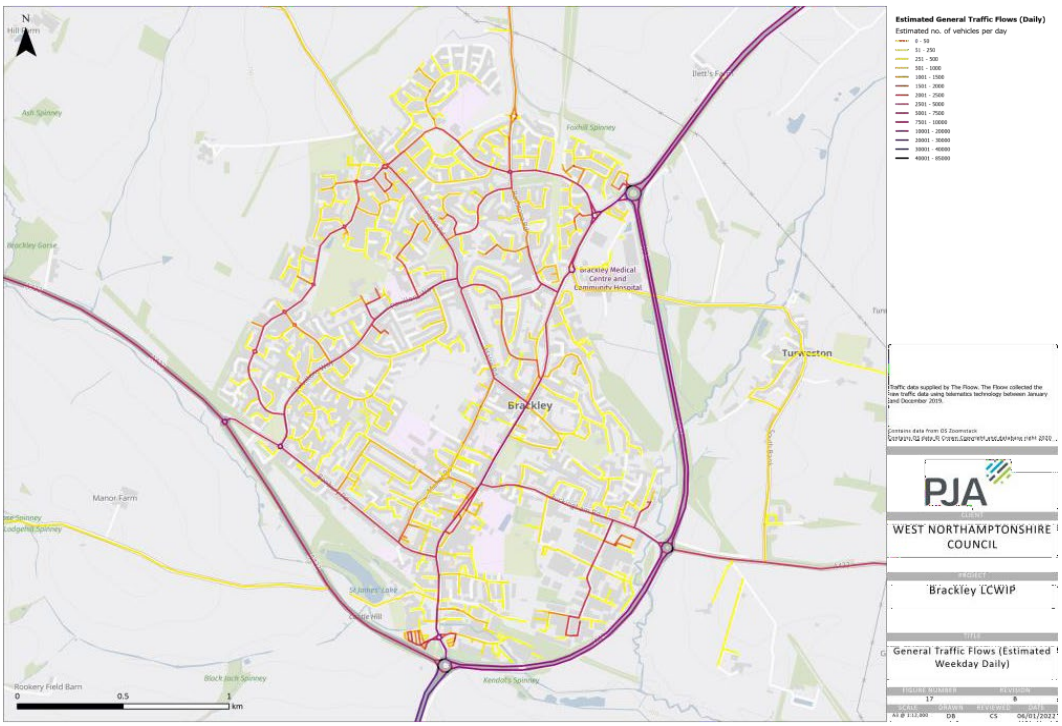

Figure 4-3: Estimated daily traffic flows

4.2.6 Based on this analysis, many of the residential streets in Brackley have traffic flows of 5,000 vehicles per day meaning that, in line with the Figure 4-4 from LTN1/20, consideration needs to be given to: either providing protected space for cycling; or reducing traffic volumes on these streets.

Figure 4-4: Figure from LTN1/20 showing the appropriate protection from motor traffic on highways based on the speed and volume of traffic

Census data

4.2.7 Figure 4-5 highlights that car ownership in Brackley is high, particularly in the northern part of the settlement where most households have more than one car. This could suggest resident's reliance on motor vehicles due to the lack of choice for alternative modes and that people may consider that local roads are unsuitable for walking and cycling, relying on cars even for very short journeys.

4.2.8 This is also reflected in the 2011 census journey to work data (see Figures 4-7 and 4-8) which shows 1,097 car trips within Brackley a day just associated with commuting. This excludes any local car trips made for other purposes such as taking children to school or shopping. This data demonstrates that a high level of local journeys entirely within Brackley are undertaken by car.

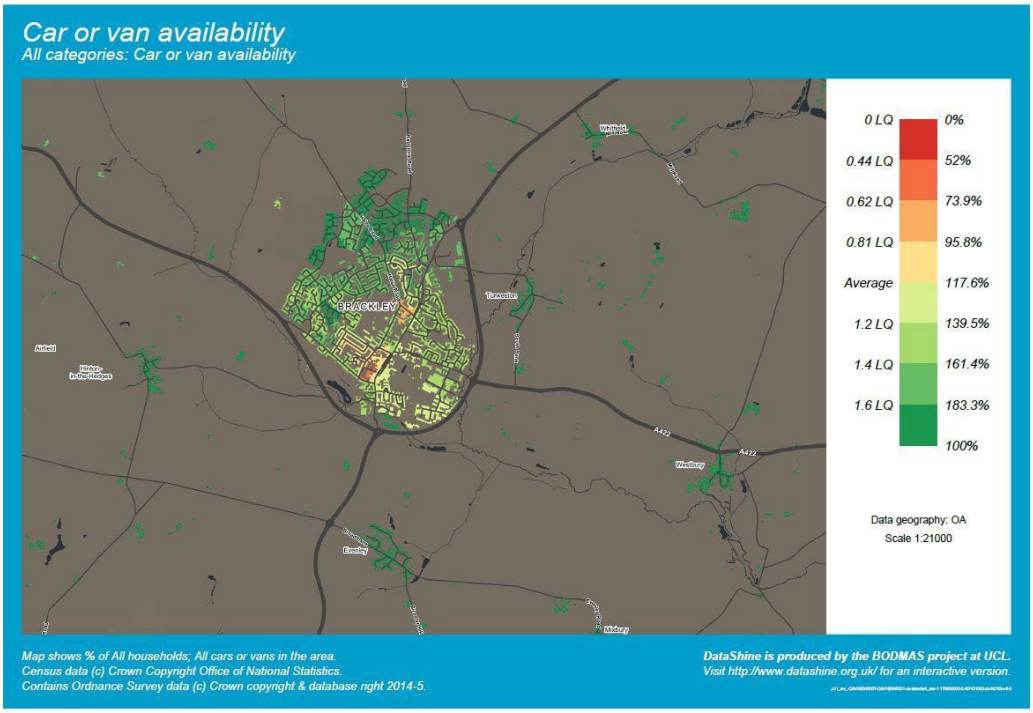

Figure 4-5: Car or van availability in Brackley (Source: 2011 census, Datashine)

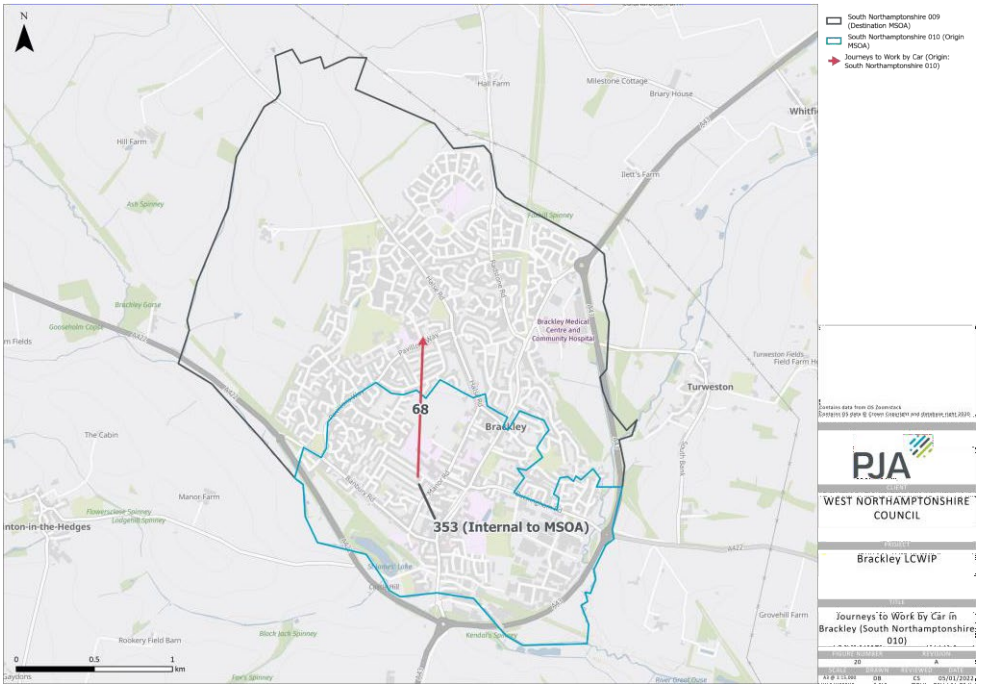

Figure 4-6: Journeys to work by car within Brackley – South Brackley (MSOA 010) (2011 census)

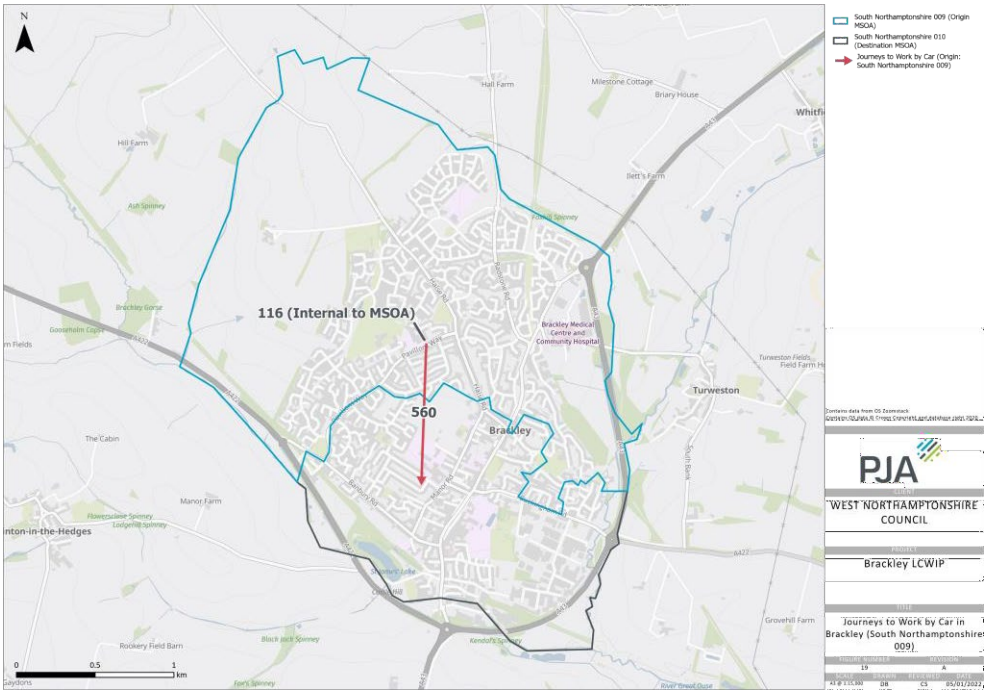

Figure 4-7: Journeys to work by car within Brackley – North Brackley (MSOA 009) (2011 census)

4.3 Network plan for cycling

4.3.1 The Propensity to Cycle Tool (www.pct.bike) is a nationwide model that identifies where increases in the rates of cycling can be expected through the provision of better infrastructure. It uses census travel to work data and school travel data and looks at trip distances to see where there may be scope for more short journeys to be undertaken by cycling. The PCT is a critical tool in the development of the LCWIP cycling networks and provides a framework of demand for identifying the location of future desire lines for cycling. It should be noted however, that the PCT uses 2011 census data and therefore should be supplemented by more recent and local knowledge to avoid being overly reliant on the PCT outputs.

Propensity to Cycle Tool Commute Layer

4.3.2 The PCT Commute layer provides scenarios for forecasting future levels of cycling which range in ambition from the 'Government Target' (based on doubling cycling set out in the 2014 draft Cycling Delivery Plan), 'Gender Equality' (where women are as likely as men to cycle), 'Go Dutch' (uses Dutch propensities to cycle) up to the 'E-Bike' scenario (builds on the 'Go Dutch' assumptions but also takes account of the role that electrically assisted cycles can play in facilitating longer distances and hillier routes. For the purposes of Brackley's LCWIP, the e-bike scenario was used to reflect the hilly and rural nature of Brackley where e-bikes are likely to need to play an important role in enabling more cycling. The PCT outputs provide two scenarios:

- Straight-Line Networks (Figure 4-8) – shows direct paths between Origin-Destinations which gives an overview of the key desire lines for cycling flows.
- Applied Networks (Figure 4-9) – the second stage applies the straight desire line to the existing road network to provide a more detailed summary of where increased cycle flows would take place on the local network.

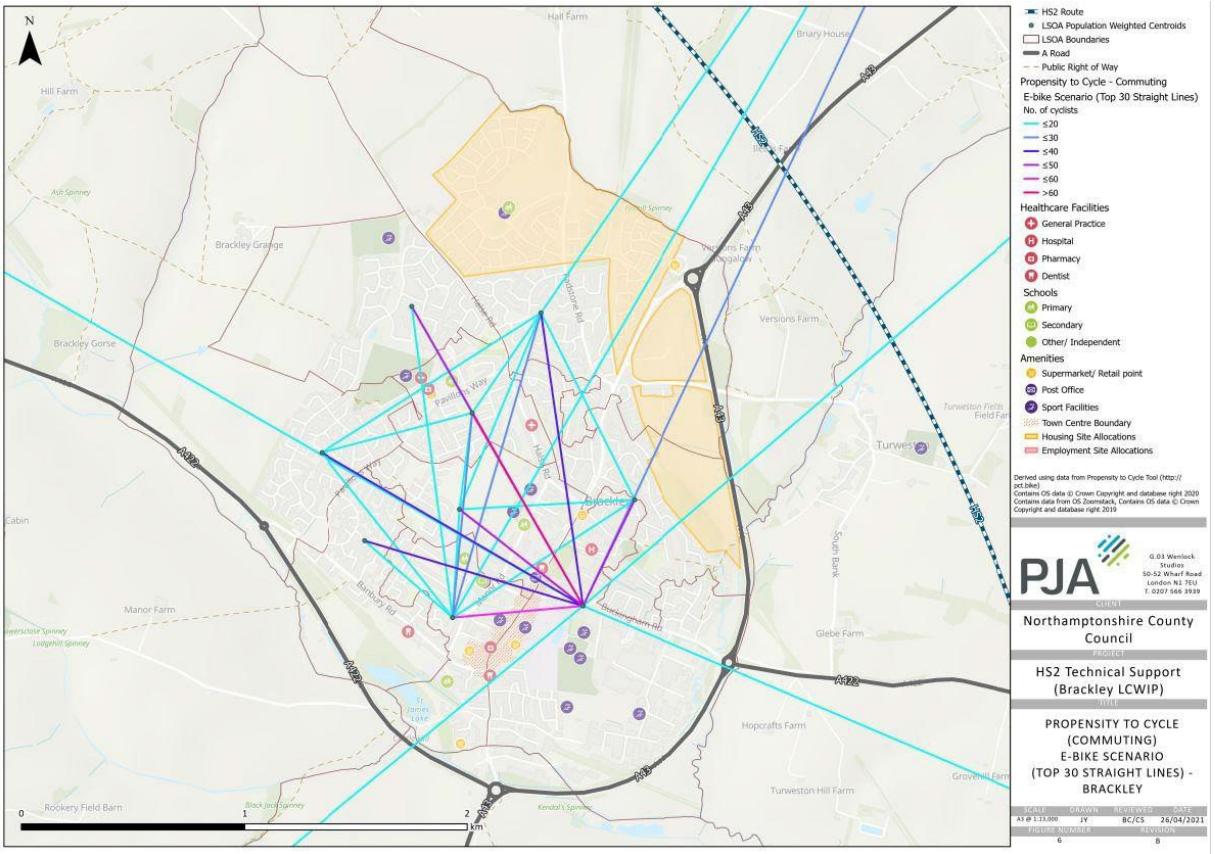

Figure 4-8: Brackley – PCT E-Bike straight-line scenario

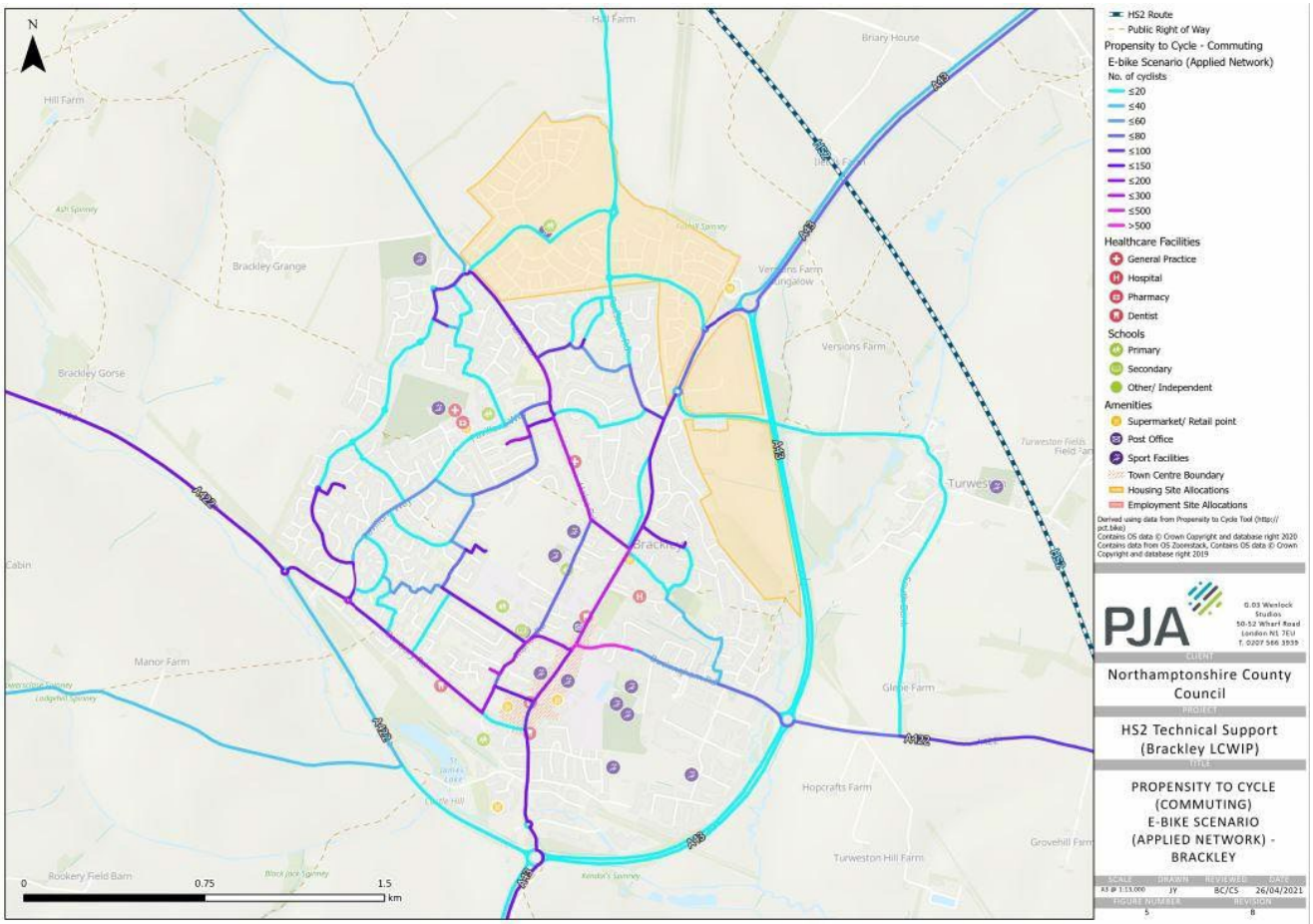

Figure 4-9: Brackley – PCT E-Bike applied network scenario

4.3.3 The PCT analysis indicated the corridors within Brackley with the highest potential for cycling are:

- The old main road through Brackley
- Buckingham Road (between High Street and Westminster Road)
- Halse Road (between High Street and Oak Road)
- Banbury Road (between Hans Apel Drive and Manor Road)
- Manor Road (between Banbury Road and Hill Street)
- Wayneflete Avenue

Propensity to Cycle Tool Schools Layer

4.3.4 The PCT schools layers uses 2010/2011 School Census travel-to-school data. The schools layer extends and complements the commuting layer by putting a greater emphasis on local trips in residential areas as opposed to arterial routes into city centres. The schools layer can therefore

help plan for cycling (and walking) at the neighbourhood-level, and is often a better proxy for local trips than the commuting layer for 'everyday trips'.

4.3.5 As with the commuting layer, the schools layer has a range of scenarios for forecasting future levels of cycling including the 'Government Target' (which represents a doubling of school cycling nationwide to 3.7%), 'Go Cambridge' (based on cycling levels among school children in Cambridge (21.5%)) and 'Go Dutch' (based on travel to school trips in the Dutch Travel Survey (41%)). The 'Go Dutch' scenario has been selected for Brackley's LCWIP is it provides the most ambitious scenario (see Figure 4-10: Brackley – PCT schools layer 'Go Dutch' applied network scenario.

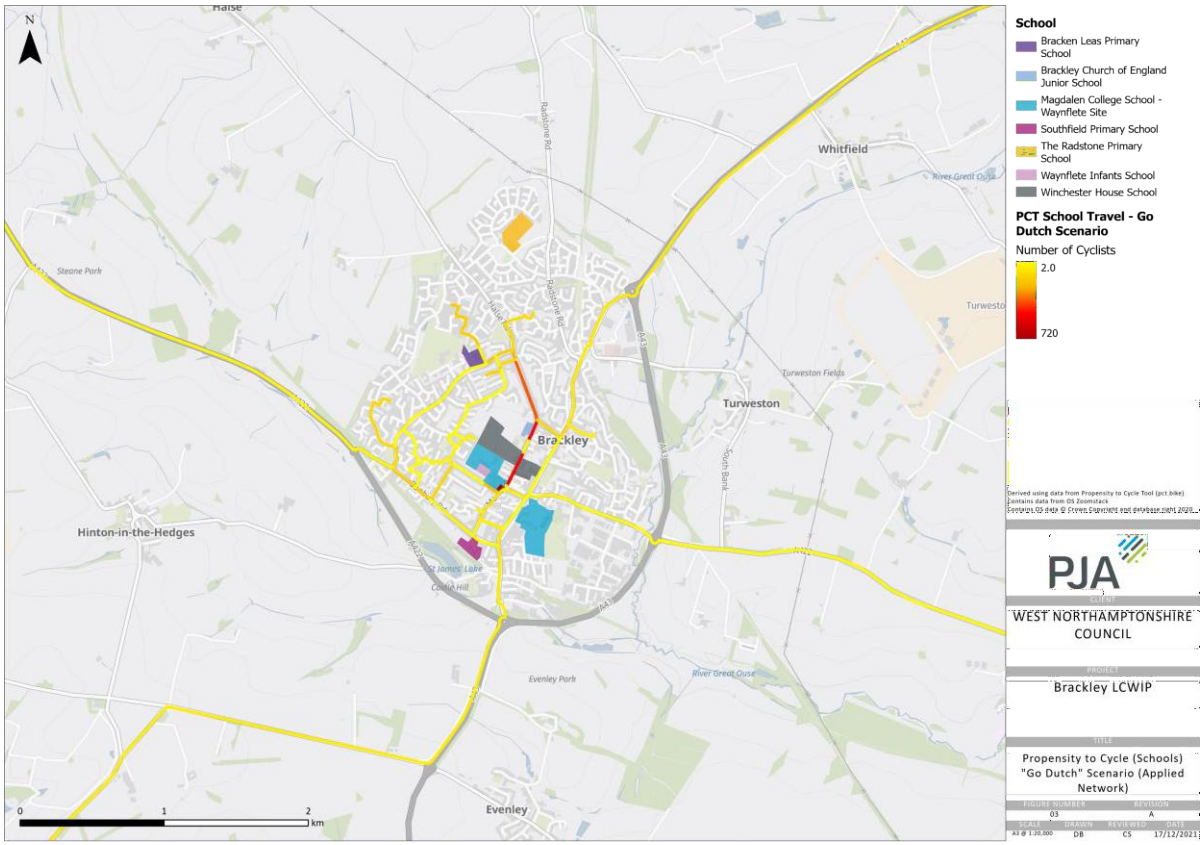

Figure 4-10: Brackley – PCT schools layer 'Go Dutch' applied network scenario

4.3.6 The analysis highlights clear demand along Manor Road generated by the concentration of schools here as well as on Halse Road, the old main road through Brackley and residential streets to the west of Manor Road.

4.3.7 The Radstone Primary School not covered in PCT schools layer as it opened after the school census was undertaken. However, it can be assumed that there will travel demand along key residential streets in the northern part of Brackley.

'Everyday trips' analysis

4.3.8 As noted above, one of the limitations of the PCT Commuting layer is the lack of detail on short 'everyday' trips that account for around two thirds of short journeys such as shopping, visiting friends, going to the doctors etc. While the PCT schools layer addresses this lack to a certain extent, PJA has developed an additional layer of analysis to further understand the potential for short journeys by cycling which is particularly useful in smaller towns and rural areas.

4.3.9 In order to determine the key desire lines for 'everyday' walking and cycling such as such as to work, school and the shops, the spatial relationship between key origin and destinations was analysed. First, a 0.5km^2 hexagon grid was applied and origin clusters of 100 or more residential dwellings was identified (Figure 4-11). Second, two classes of destinations were identified (see Figure 4-12):

- Class 1: key employment sites, local, town and village centres
- Class 2: education (primary and second schools), healthcare facilities (hospitals, GP practices, dentists), community centres, leisure facilities, supermarkets etc.

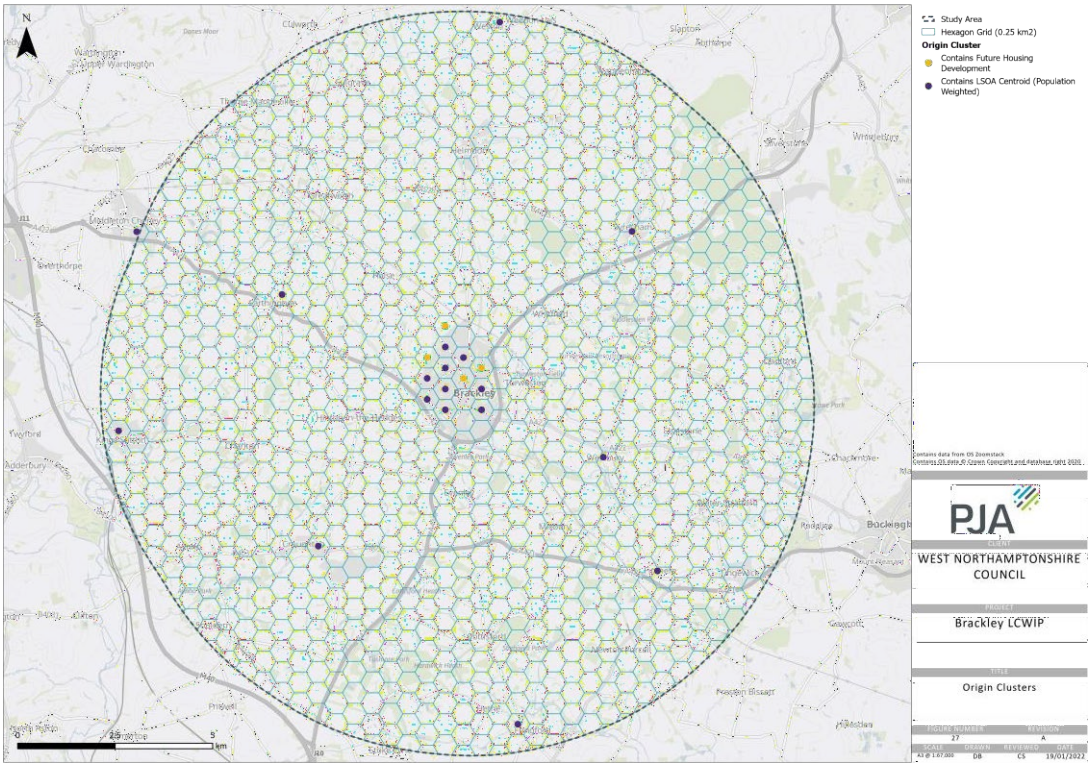

Figure 4-11: 'Everyday trips' - Origin clusters

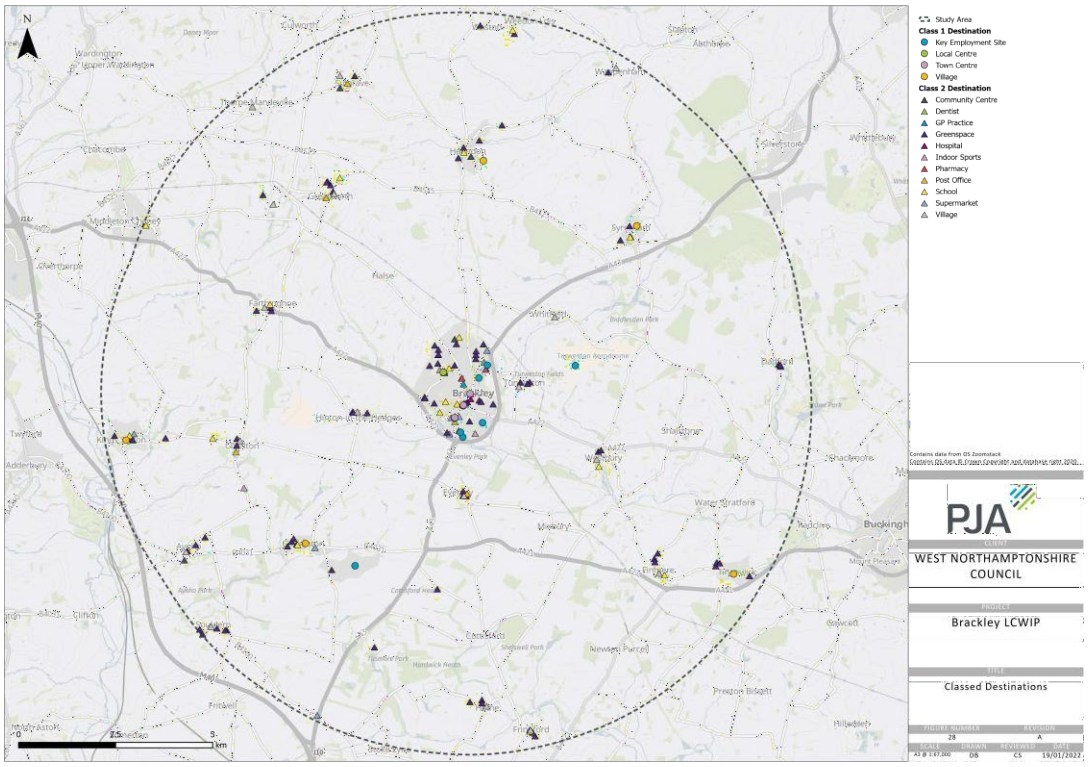

Figure 4-12: 'Everyday trips' – Destinations by class

4.3.10 Origin-Destination desire lines were created from each origin centroid to the nearest Class 2 destination, and to all Class 1 destinations between 2km and 5km. A "K-means" clustering analysis was used to cluster desire lines together and select the 10 routes with the highest demand for 'everyday cycling' (Figure 4-13). The analysis demonstrates demand for cycling is relatively low in Brackley itself, probably due to its compact nature meaning walking is of greater importance. The main demand for cycling within is north-south where distances are greatest.

Figure 4-13: Top 10 'everyday' cycling desire lines (2-5km)

4.3.11 Based on the above analysis Halse Road and the old main road through Brackley were identified as priority cycle routes (see Figure 4-14) within Brackley for auditing using the Route Selection Tool (RST) set out in the DfT LCWIP process guidance. In addition, a number of additional routes into Brackley were audited as part of inter-urban routes (see Chapter 5).

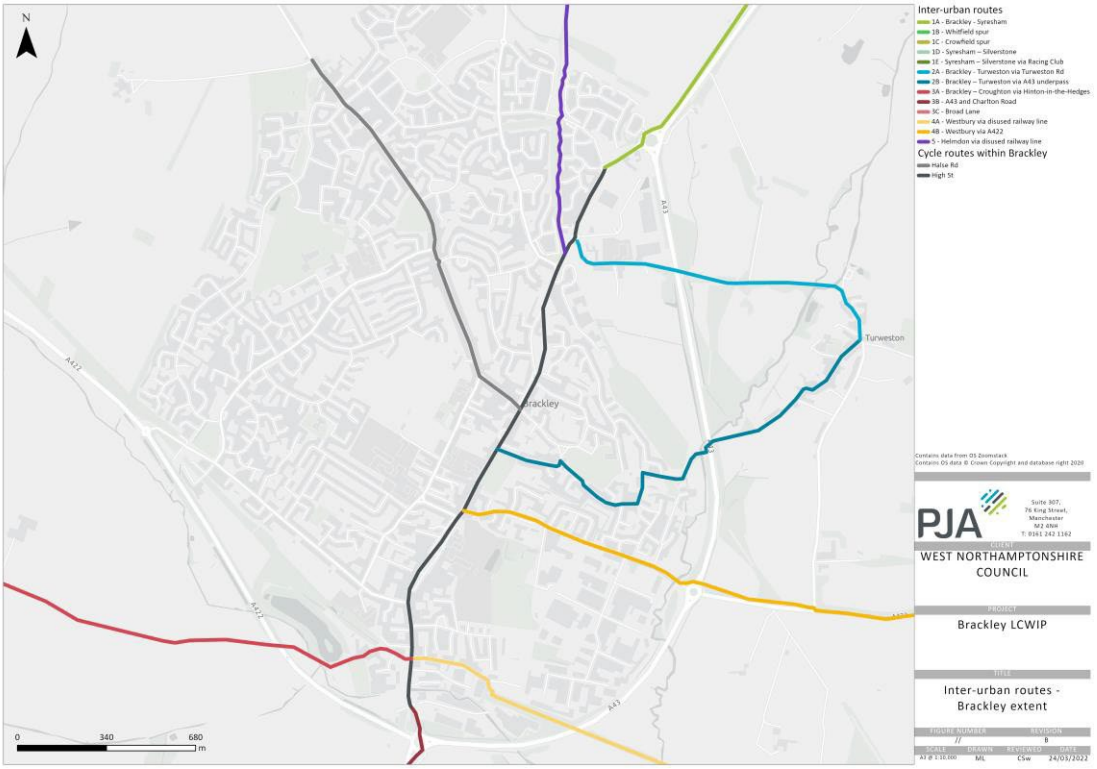

Figure 4-14: Prioritised cycle routes for auditing within Brackley

4.4 RST audits and recommendations

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

- Directness: Compares the length of cycle route against the equivalent vehicle route with cycle routes that are shorter than the vehicle is scored positively for Directness. Higher scores can be achieved through the introduction of modal filters or routing cyclists through parks/open spaces to provide a more direct connection.
- Gradient: Identifies the steepest section of route within the proposed alignment with gradients that exceed either 5% in gradient and/or 50m in length scoring lower.
- Safety: Considers vehicle flows and speeds to better understand the exposure of cyclists to vehicular traffic. Routes with either protected cycle facilities or low traffic environments score highest.

- Connectivity: Records the number of individual cycle connections into a section of route. Routes should aim to have >4 connections per km.
- Comfort: Assesses the space available for cycling and the quality of surfacing with a preference for protected cycle facilities of >3m (bi-directional) or >2m (uniflow).
- Critical Junctions: Provides a number of critical junction design issues including vehicle flows, protection from vehicular traffic, wide junction splays, and junction geometries.

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

- **Lack of dedicated cycling facilities** – the current cycle facilities within Brackley are very limited which results in cyclists being forced to use the carriageway and share with general traffic on most routes. A short section of poorly signed shared use footway is provided at the northern end of Northampton Road. The recommendation is to extend the shared use footway along Northampton Road to St Peter's Road.
- **Junctions –** none of the crossings within Brackley town centre have dedicated cycle crossing facilities. This undermines the town's cycle permeability and makes it difficult to connect with surrounding routes. A key recommendation therefore is to improve key junctions/crossings in the town to improve connectivity and permeability for cycling. Many of the junctions identified for improvements also require improvements for pedestrians too.
- **High vehicle flows** - This was a particular issue on busier routes, such as the old main road through Brackley despite the relief route removing much of the through traffic from Brackley but also on more residential streets such as Halse Road and Pavillons Way where there is insufficient space for protected facilities such as cycle tracks. The recommendation is therefore to introduce additional measures to reduce traffic volumes and speeds to provide safer conditions for cycling in the carriageway. These measures would also improve conditions for walking.

4.4.3 The full RST findings are presented in Appendix B.

4.5 Network plan for walking

4.5.1 The rationale of developing a network plan for walking is to improve and extend the quality and coverage of the existing walking network to enable more people to walk for everyday trips. The development of the walking network is based upon the identification of 'Core Walking Zones' (CWZ) which represent areas that are expected to contain key walking trip generators and therefore likely to create higher levels of footfall (see Figure 4-15). As well as reviewing walking conditions within the CWZ itself, the site audits review conditions on the key walking routes into the CWZ. This ensures that the wider connectivity and permeability of the CWZs is considered during the network development.

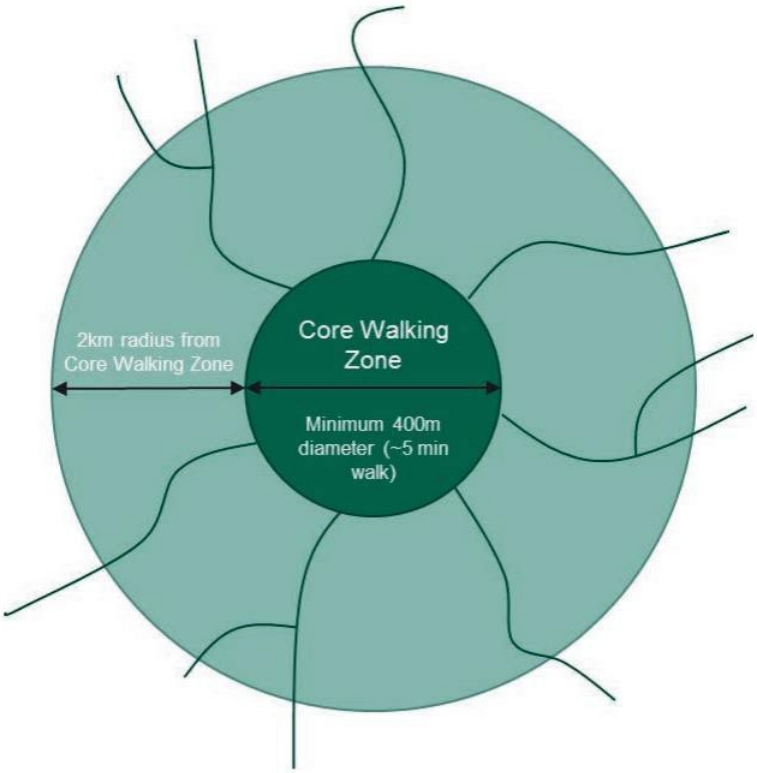

Figure 4-15: Illustration of Core Walking Zones and key walking routes

4.5.2 A walking isochrone for Brackley was generated in ArcGIS to illustrate the extent of a 20 minute walk from the centre of the town using the existing road network. Figure 4-23 illustrates how Brackley is already a very walkable town with a majority of key destinations within a 20 minute walk across the town. The focus of the walking network therefore was on developing a series of walking routes that strategically connect the town centre with its surroundings.

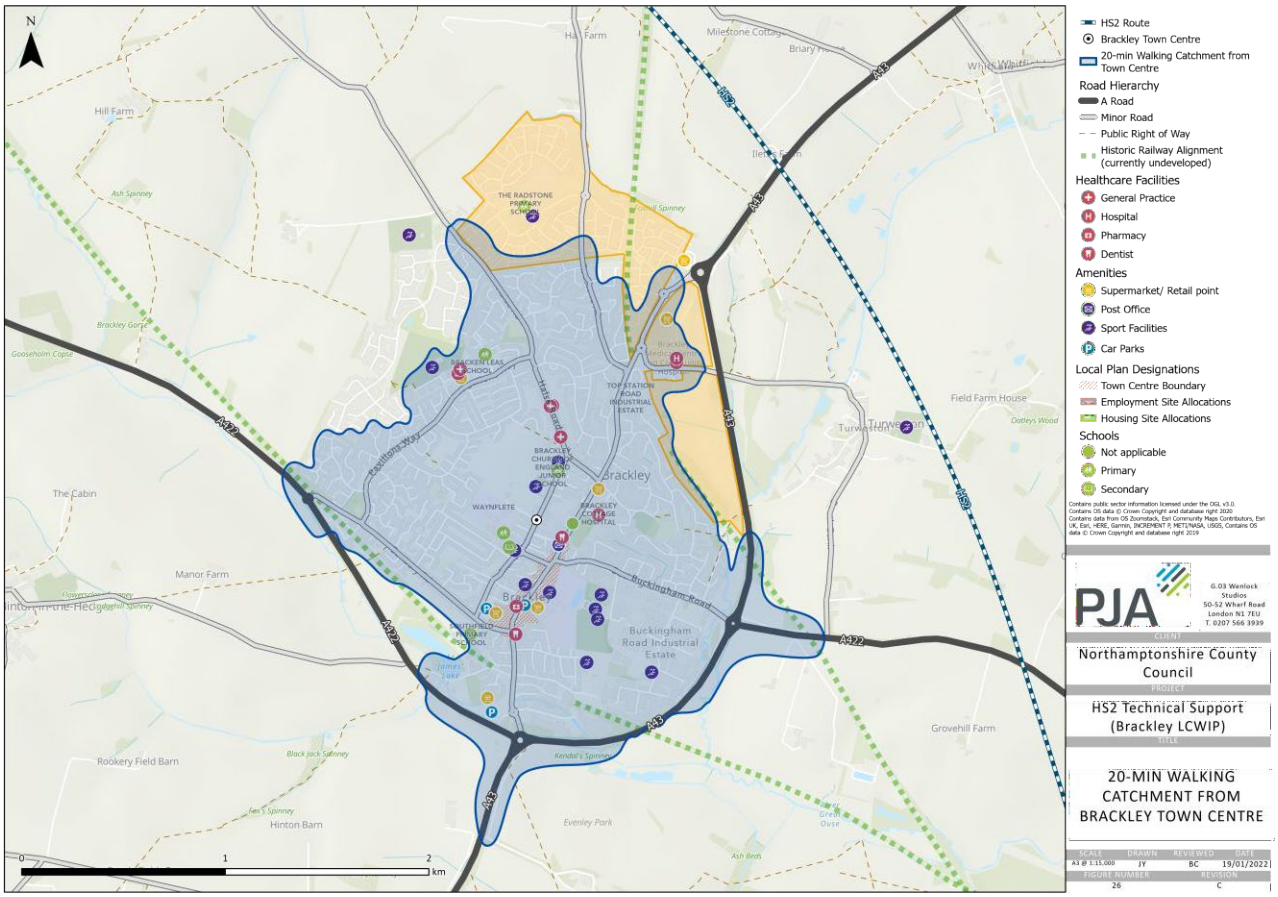

Figure 4-16: 20-minute walking catchment from Brackley Town Centre

'Everyday trips' analysis

4.5.3 The 'everyday trips' analysis detailed above for cycling trips within Brackley was also undertaken for desire lines up to 2km to identify key walking demand in order to identify the extent of the core walking zone and key walking routes. A "K-means" clustering analysis was used to cluster desire lines together and select the 20 routes with the highest demand for 'everyday walking' (Figure 4-17). The analysis illustrates the while much of the demand is focused on the historic centre and high street, there is also some demand to other key trip attractors in Brackley such as schools, supermarkets, the medical centre and the leisure centre. This demonstrates the importance of making the whole town pedestrian-friendly rather than focusing on the town centre, particularly as Brackley continues to grow.

Figure 4-17: Top 20 'everyday' walking desire lines

4.5.4 Based on the analysis of the walking isochrone and the 'everyday' walking desire lines, the core walking zone boundary and key walking routes were identified (see Figure 4-26). These were then audited on site using the Walking Route Audit Tool (WRAT) methodology set out in the DfT LCWIP process guidance. The routes reflect the key desire lines to the town centre from the surrounding residential areas which mostly follow roads, although some routes use public rights of way (PROW).

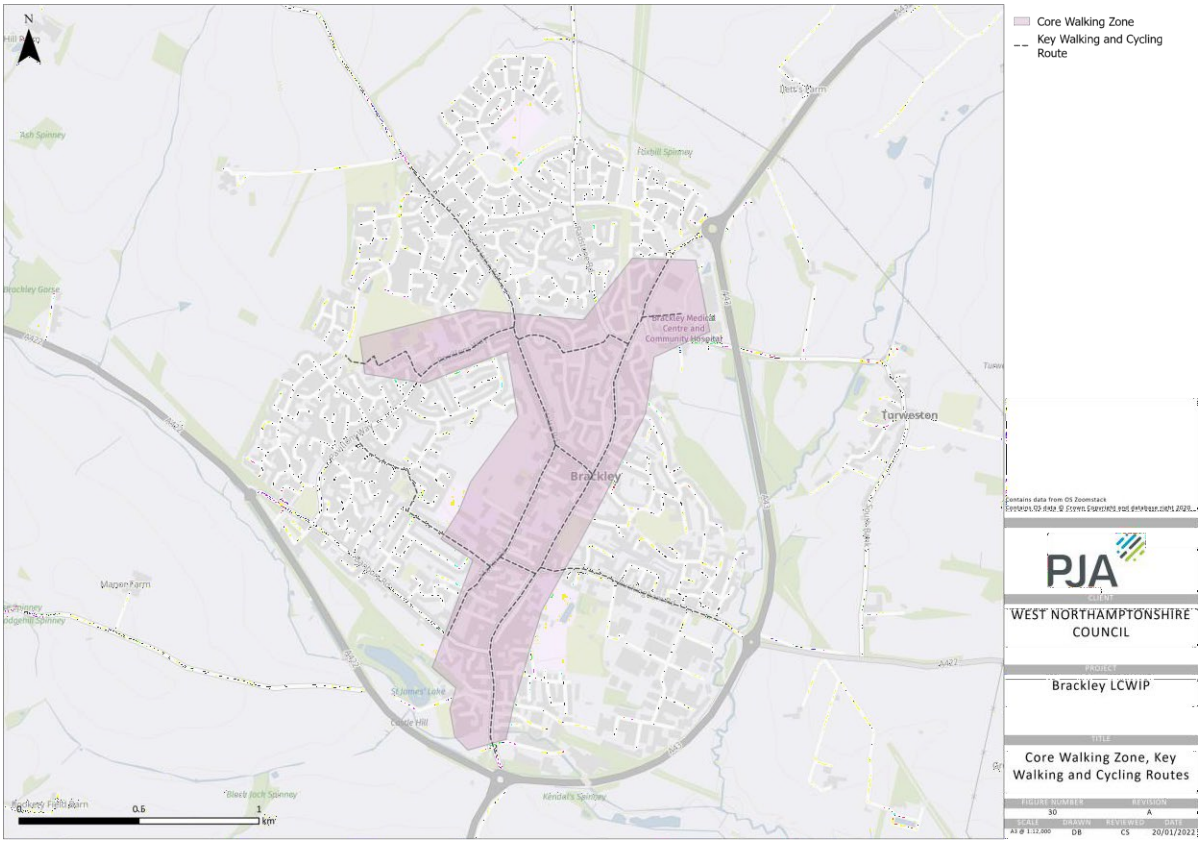

Figure 4-18: Brackley core walking zone and key walking routes

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

- Attractiveness: Considers the impact of maintenance, traffic noise, pollution, and fear of crime upon the attractiveness of a route.
- Comfort: Reviews the amount of space available for walking and the impact of obstructions upon walking such as footway parking, street clutter and staggered crossings.
- Directness: Assesses how closely pedestrian facilities are aligned with the natural desire line and accommodating the crossing facilities are for pedestrians to follow their preferred route.
- Safety: Focusses on the impact of vehicle volumes and speeds and interaction with pedestrians.
- Coherence: Focuses on the provision of dropped kerb and tactile information for pedestrians.

4.5.6 The WRAT scores for the routes are summarised in Figure 4-19 below.

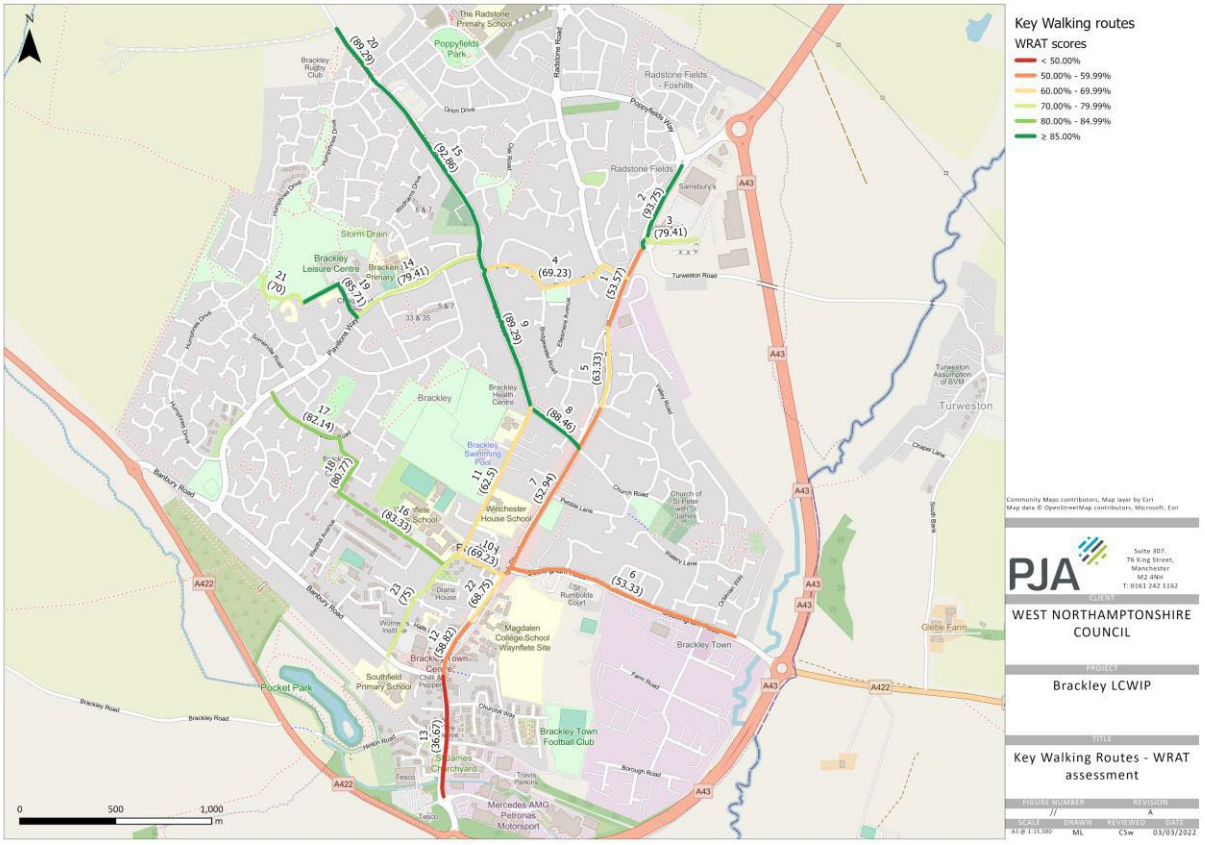

Figure 4-19: Key walking route WRAT scores

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

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

- **Dedicated crossing points:** Pedestrian crossing points are limited in Brackley particularly across the main roads, such as Northampton Road. The cumulative effect is to limit the permeability and continuity of the town's walking network. Pedestrians are reliant on a limited number of crossings which are not necessarily aligned with the natural desire lines. The recommendations identify a series of locations in the town where new or relocated facilities would help to enhance the network's connectivity.
- **Missing dropped kerb/tactile paving:** Several priority junctions have missing or substandard provision of dropped kerb and/or tactile paving. This issue should be considered alongside the junction treatment locations as many sites have both issues.
- **Missing and narrow footways:** There are several locations where footways are narrow or completely absent on one or both sides, including Manor Road. On very quiet streets, this is less of an issue. However, on busier roads, this is a key barrier to walking and in creating a connected walking network. The recommendations identify where footway widening would be beneficial.
- **Paths and alleyways:** Many of the town's cul-de-sacs are linked by narrow paths and alleyways which provide important connections in the walking network and often much more direct routes than the on-road equivalent. However, clutter and maintenance were key issues which undermined the attractiveness of these routes. Though few had barriers restricting access, the WRAT audits identified that many were narrow and lacked lighting.
- **Signage and wayfinding:** although Brackley benefits from an extensive network of footpaths, they are often not signposted meaning new residents may not be aware of them. A comprehensive signing scheme for the whole town would help promote the network and encourage greater use.

4.5.8 The full walking audit findings are presented in Appendix C.

4.6 Design recommendations and prioritisation

4.6.1 Based on the findings from the RST and WRAT audits, design recommendations were made for each cycling and walking route and are summarised in Figure 4-20. The below plan uses icons to represent the different design measures across Brackley.

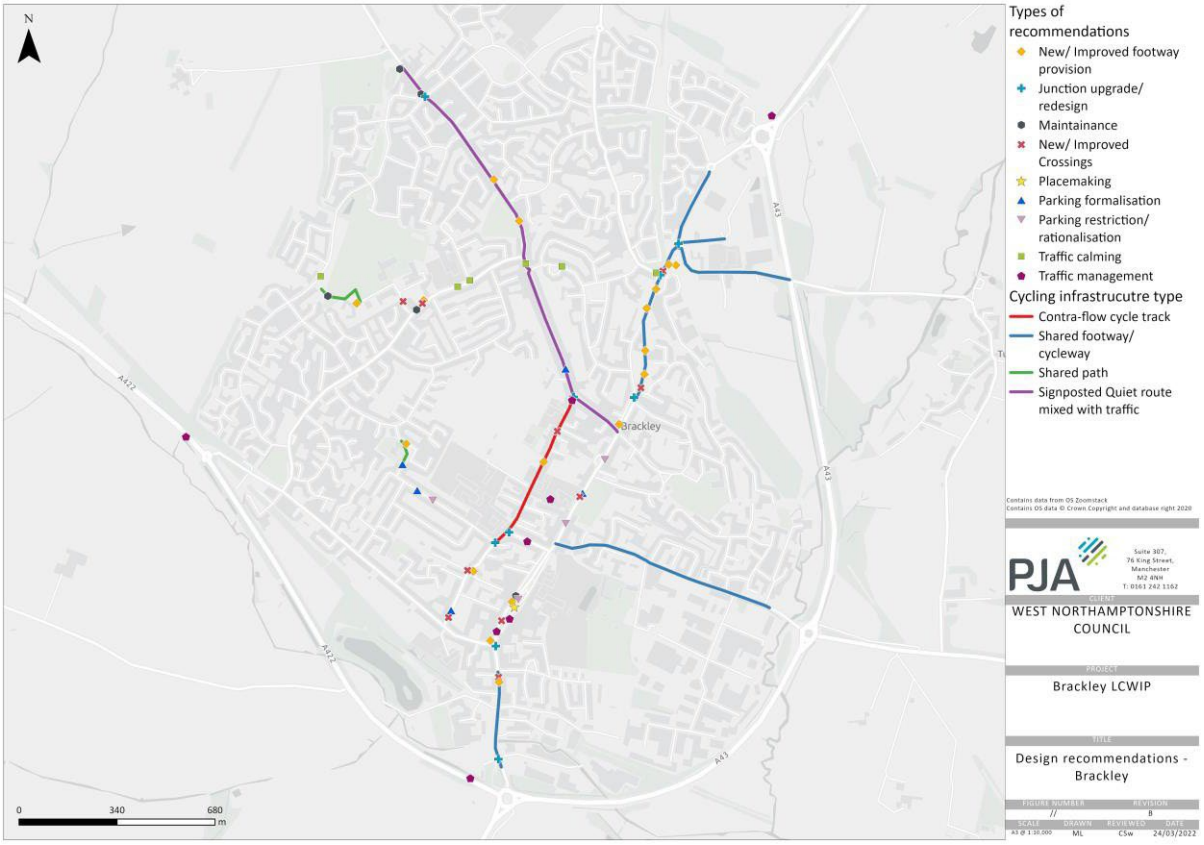

Figure 4-20: Design recommendations for Brackley

4.6.2 The purpose of the prioritisation stage is to plan the programme for delivery of the walking and cycling measures identified in Stages 3 and 4. The LCWIP methodology includes a suggested approach for prioritising measures however it also emphasises that the methodology should be tailored to the local context. On this basis, a bespoke prioritisation approach was developed for Brackley which identified the below 'priority clusters' (Figure 4-21).

- Manor Road including the Hill Street junction;
- Banbury Road/Market Place junction;
- Market Place; and
- High St/Northampton Rd.

4.6.3 The first three locations already see high levels of pedestrian movement meaning improvements would benefit people already walking while enabling more people to choose to walk or cycle for local journeys.

4.6.4 High Street/Northampton Road has also been identified as a priority location. Although it does not currently have high levels of walking or cycling, this route is currently very hostile to active modes and is a key barrier to enabling more walking and cycling in Brackley.

4.6.5 This approach is more practicable for delivery as it ensures that the recommended design measures are co-ordinated in their delivery as part of more joined-up design packages. The design recommendations for the priority clusters are summarised in Appendix D and full costings are provided in Appendix E.

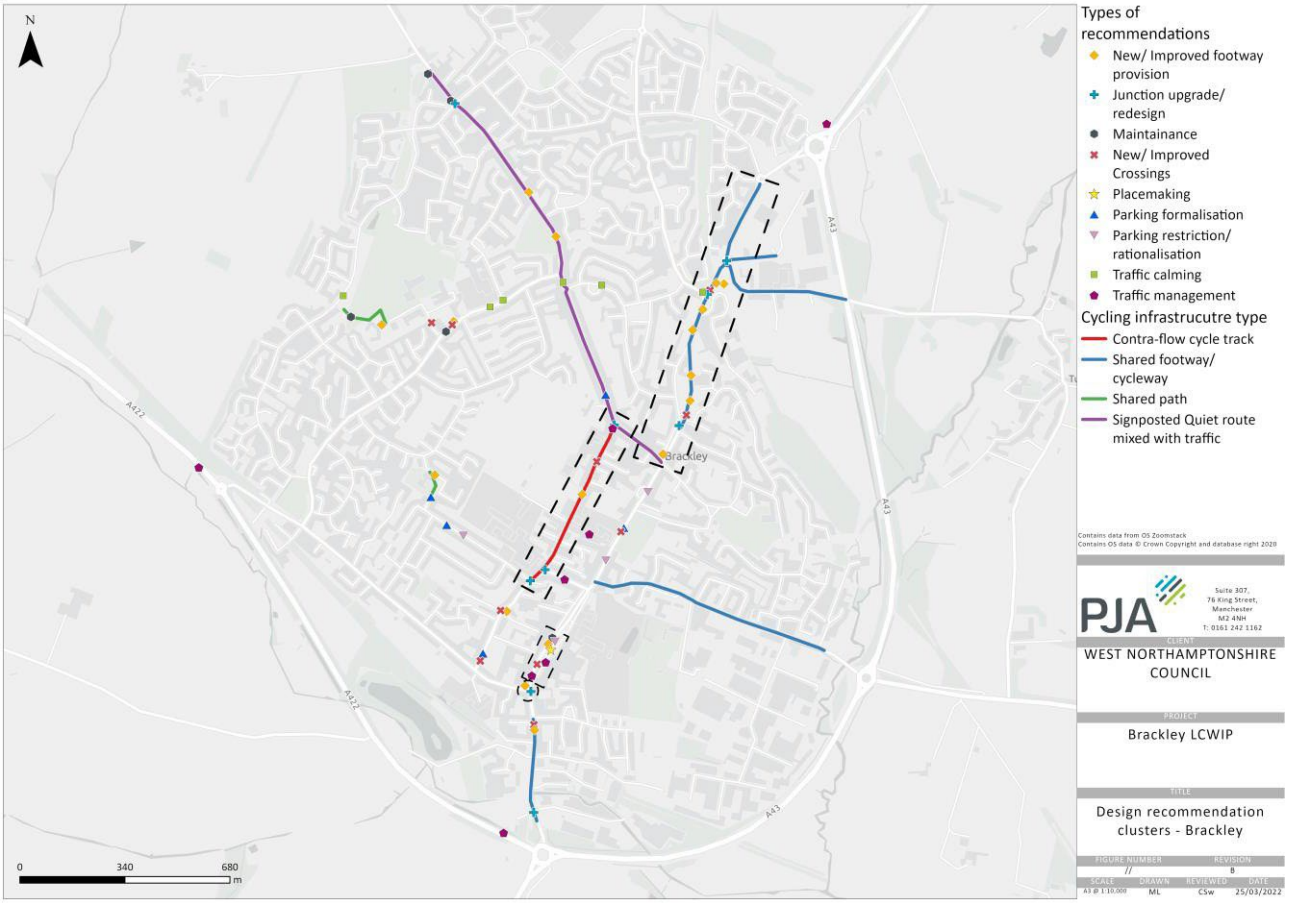

Figure 4-21: Prioritised clusters

4.7 Delivery plan

Short term

4.7.1 It is recommended that the short-term delivery plan focuses on quick wins and priority clusters. A Brackley-wide programme of quick wins around themes such as signage and wayfinding, removing barriers and installing dropped kerbs and tactile paving would also help residents across Brackley.

Medium term

4.7.2 Medium term improvements should focus on the more expensive public realm elements of the priority clusters and areas that require more design or modelling work such as the potential bus gate and public realm improvements in Market Place.

Longer term

4.7.3 Longer term, to manage traffic volumes and maximise the potential for walking and cycling as Brackley continues to grow, it may be necessary to implement additional traffic management measures beyond the core walking zone. These could include point closures or modal filters on orbital residential streets such as Poppyfields Way and Humphries Drive to ensure traffic uses the main radial routes within Brackley. As Brackley continues to grow and new development is built further away from the core walking zone, it will also be important to consider the provision of local facilities to minimise the need for new residents to travel by car.

5 Inter-urban Routes

5.1 Introduction

5.1.1 To fulfil the Brackley's active travel potential and help achieve modal shift, it is necessary to improve and increase the availability of routes between Brackley and its surrounding settlements. For the purposes of this study, these routes have been described as 'inter-urban routes'.

5.1.2 This chapter describes the approach taken to identify the links with the most potential demand and to review and identify preferred alignments to be developed as future inter-urban routes based on the following stages:

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

5.2 Scope of inter-urban routes

5.2.1 A cycling isochrone for Brackley was generated in ArcGIS to illustrate the extent of a 30-minute cycle from the centre of the town using the existing road network. Figure 5-1 demonstrates there are a number of settlements within a 30-minute cycle ride of Brackley. The focus of the inter-urban cycle network is therefore on identifying which of the settlements within cycling distance of Brackley has the greatest potential.

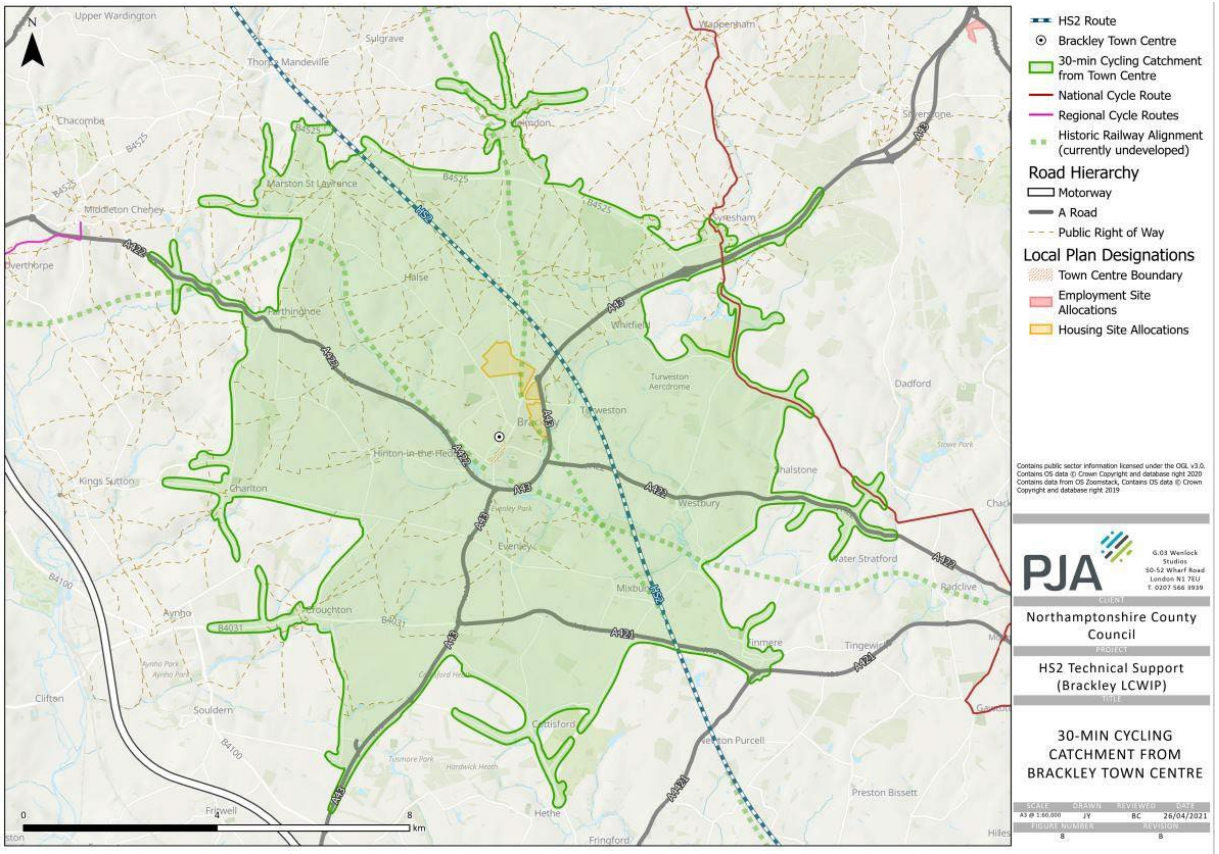

Figure 5-1: 30-minute cycle catchment from Brackley

5.3 Desktop review and network development

5.3.1 The main tool for identifying routes with the most potential for cycling is the Propensity to Cycle Tool (PCT). However, this has limitations in rural areas where travel distances are greater, population densities are lower and commuting accounts for a smaller proportion of journeys. As a result, a range of methods have been utilised to identify the settlements with the greatest potential for cycling (and walking in some cases) to Brackley.

Propensity to Cycle Tool

5.3.2 To understand the future demand for cycling across the wider network, we have updated the Propensity to Cycle Tool 'e-bike' scenario to incorporate new developments designated in the Local Plan (see Figure 5-2).

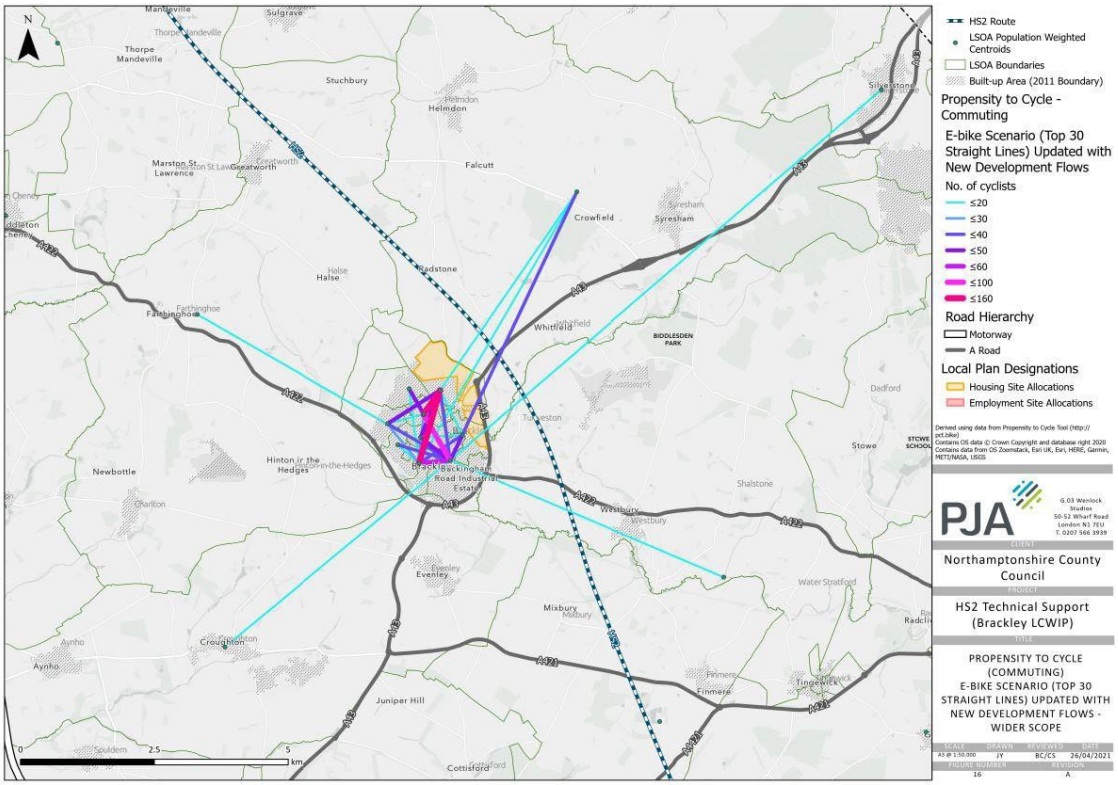

Figure 5-2: Inter-urban routes: PCT E-Bike straight-line scenario updated with new development flows

5.3.3 The PCT straight line analysis (which snaps to the nearest census Lower Super Output Area (LSOA)) shows that the highest cycling potential is between Brackley and Syresham/ Helmdon (approximately 80 trips). Syresham and Helmdon are in the same LSOA meaning it is not possible to understand the demand from each settlement using the PCT. There is also some potential for cycling journeys between Brackley and Silverstone (approximately 11 trips) and between Syresham and Silverstone (approximately 7 trips).

5.3.4 The PCT relies on the 2011 Census journey to work data meaning it does not reflect non-commuting journeys or changes over the last decade. In urban areas a multiplier of three can be applied to account for other cycle trips such as leisure, shopping and social trips. In rural areas such as the route between Brackley and Silverstone, where most jobs are outside normal cycling distances, the PCT is likely to significantly undercount cycling potential and a multiplier as high as five could be appropriate[2]. Applying a conservative multiplier of three (and assuming 100% of the demand shown in the PCT is for Syresham) provides the following forecast cycling trips:

- Brackley to Syresham/Helmdon: 240
- Brackley to Silverstone: 32

[2] Advice provided by Dr Robin Lovelace of the University of Leeds who developed the Propensity to Cycle Tool.

- Syresham to Silverstone: 22

5.3.5 In total, there are 294 daily cycle trips forecast for the A43 corridor between Brackley and Silverstone if a high-quality route is provided. The PCT analysis also shows there is demand between Brackley and Croughton and Farthinghoe.

'Everyday trips' analysis

5.3.6 Due to the limitations of the PCT Commuting layer detailed above PJA has developed an additional layer of analysis to further understand the potential for journeys by cycling which is particularly useful in smaller towns and rural areas.

5.3.7 The methodology for the everyday trips analysis is detailed is paragraphs 4.3.8 - 4.3.10. For the inter-urban routes, analysis was undertaken for distances of 2-5km (Figure 5-3) and 5-8km (Figure 5-4). 5km is normally viewed as the maximum distance to be used for the purposes of cycle network planning in urban areas as few people will consider cycling further than this. However, for rural areas where distances are greater, it is appropriate to consider slightly further distances.

Figure 5-3: Top 10 'everyday' cycling desire lines (2-5km)

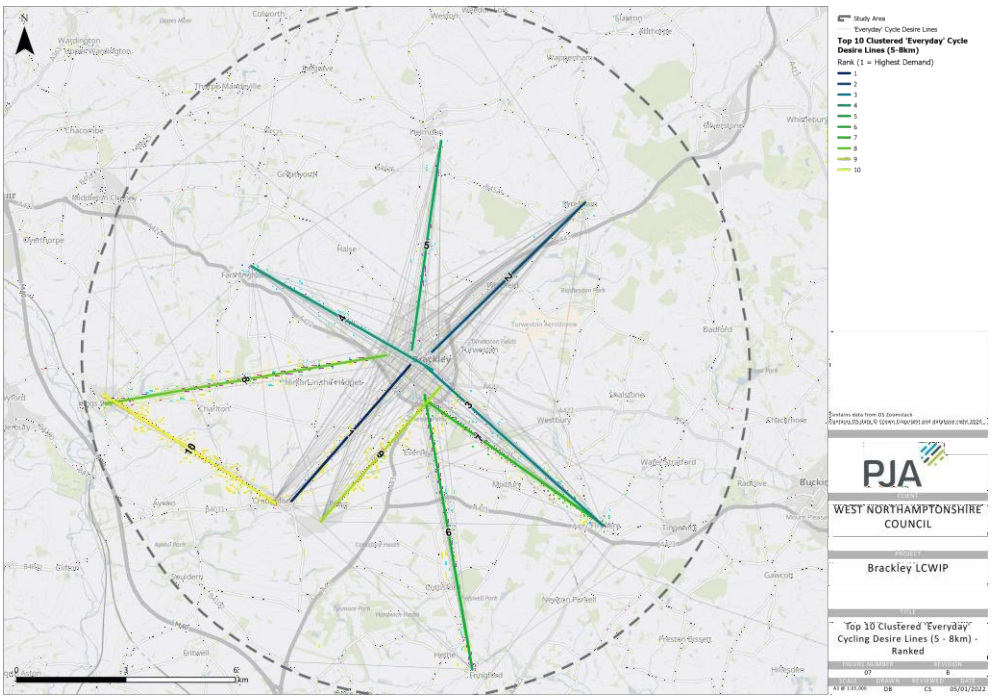

Figure 5-4: Top 10 'everyday' cycling desire lines (5-8km)

5.3.8 Figure 5-3 shows that the highest demand for journeys between 2-5km is to Westbury and Turweston while Figure 5-4 indicates the most potential for 5-8km journeys is to Croughton and Syresham. The analysis also shows the demand between smaller settlements including Kings Sutton to Charlton and Charlton to Croughton, demonstrating the potential for short trips to be made along sections of longer distance cycle routes

Strava Metro

5.3.9 In order to sense check this approach and develop a comprehensive network that maximises the potential for cycling and gain the best possible understanding of current cycling and residents' propensity to cycle, we have also reviewed Strava Metro data to understand where people are currently cycling. While this information doesn't reliably indicate demand, it can highlight severance by showing routes and areas that cyclists avoid.

5.3.10 Strava provide the data collected by individuals using the Strava app to track their rides, runs and walks to local authorities free of charge to help them understand mobility patterns and inform investment in infrastructure. By its nature, the dataset has limitations and should not be viewed as comprehensive in terms of the types of journey being undertaken or the absolute numbers. For example, it only represents people who use Strava and only rides that they choose to record; short cycle trips to the shops are not likely to be recorded. However, it can help build a wider picture of routes that are currently cycled, particularly leisure cycling which is not captured in the PCT.

5.3.11 The plans below show the data for May-July 2019 to illustrate typical patterns pre-pandemic and May-July 2020 when cycling rates were highest as the pandemic resulted in quieter roads and people taking up cycling, particularly for leisure. Key findings from the Strava data are:

- Approximately 85% of trips are recorded as leisure;
- It aligns with the PCT analysis in terms of the key routes within Brackley, particularly the importance of High Street;
- Cycling trips are taking place between Brackley and nearby settlements such as Turweston and Evenley;
- People are cycling within and around Brackley, Syresham and Silverstone but not between them; and
- The pandemic led to an approximate doubling in cycling levels, particularly on rural routes in the area.

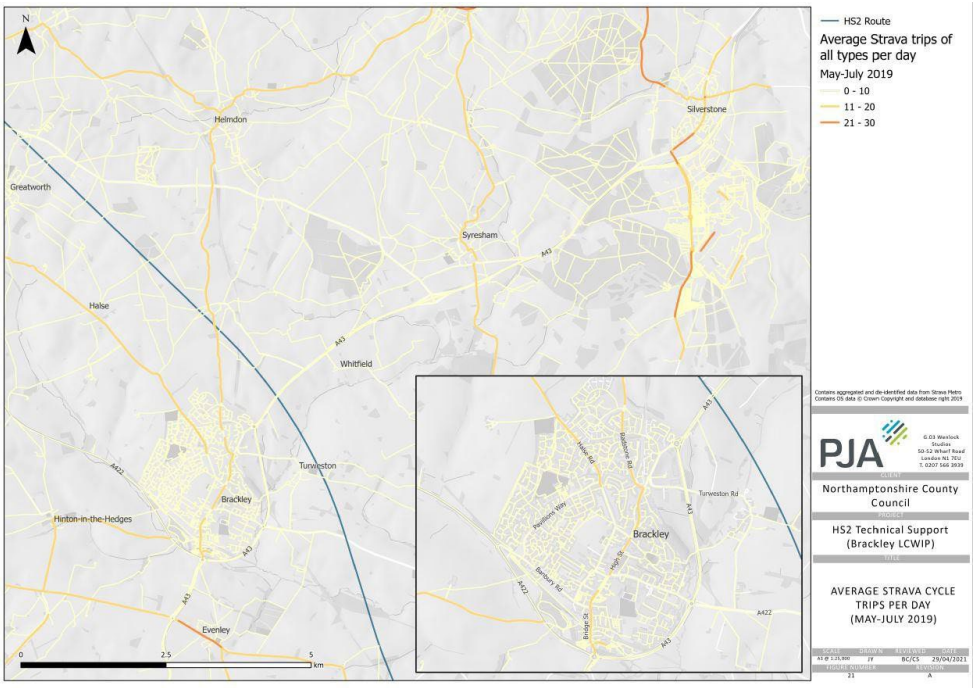

Figure 5-5: Strava cycle trips per day (May-July 2019)

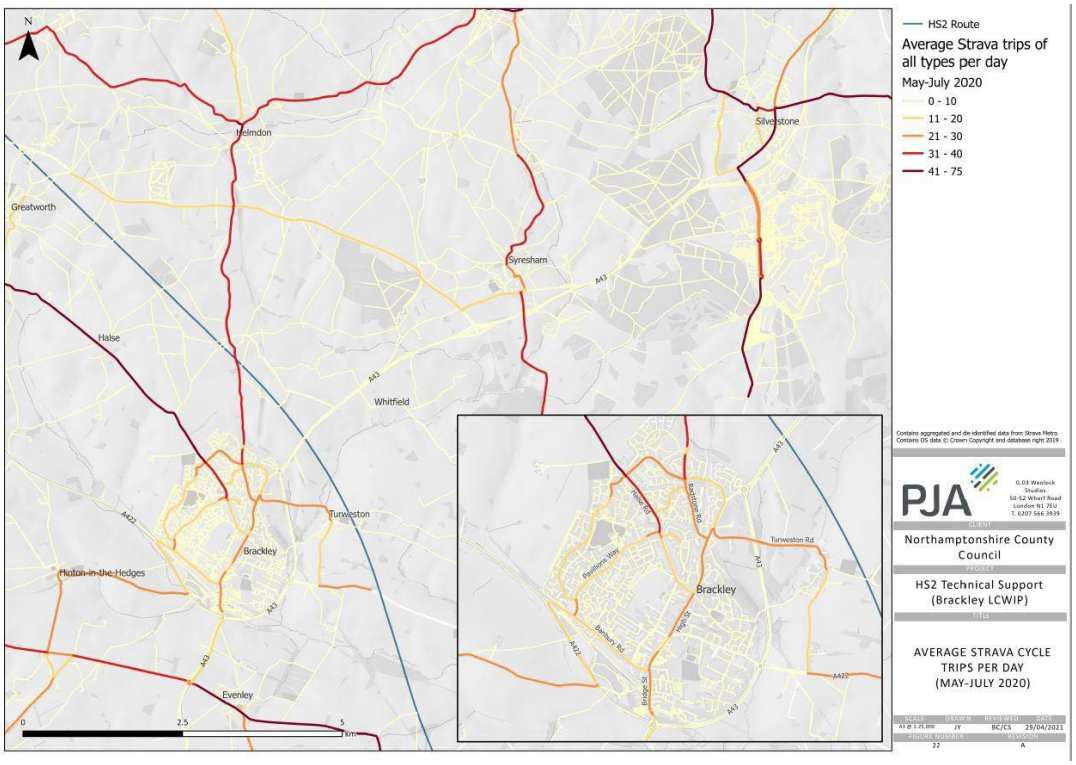

Figure 5-6: Strava cycle trips per day (May-July 2020)

5.3.12 The Strava data highlights the severance between Brackley, Syresham and Silverstone caused by the A43 and lack of other routes and suggests there is likely to be demand for cycling between them if safe, direct infrastructure is provided. Other routes in the vicinity of Brackley, Syresham and Silverstone recorded between 20 and 75 cycle trips a day between May and July 2020. Therefore, there is likely to be latent demand for leisure and recreational cycling between the three settlements if conditions could be improved. The Strava data also supports the uplifted PCT figures set out above.

Stakeholder engagement

5.3.13 In addition to data analysis, it is recognised that stakeholder input and local knowledge is important for developing walking and cycling networks, particularly in rural areas where data on walking and cycling can be patchy. Therefore, a workshop was held with approximately 20 stakeholders including local councillors, officers and active travel campaigners.

5.3.14 The workshop confirmed strong political and resident support for a route to Helmdon along the disused railway line linking to the significant new residential development at the northern end of Brackley and that there is already significant demand from leisure cyclists and schoolchildren who would cycle if a safe route was provided. It was also noted that the existing on-road route between Brackley and Helmdon is not safe for cycling.

Prioritised network and route alignments

5.3.15 Based on the above analysis, five settlements have been prioritised:

- Syresham (and on to Silverstone)
- Turweston
- Westbury
- Croughton
- Helmdon

5.3.16 Draft route alignments were identified and discussed with stakeholders to identify preferred alignments to audit, comprising a mix of busy roads, minor roads, PROW, disused railway lines and farm tracks (see Figure 5-7).

5.3.17 Although Silverstone is beyond the distance most people would cycle from Brackley and is outside the area of analysis for this LCWIP, it is a key employment and education hub and is within cycling distance of Syresham. Therefore, a route between Syresham and Silverstone has also been considered. Stakeholders also advised that spurs to Crowfield and Whitfield would be welcomed by residents as they are currently severed from surrounding communities by busy roads.

5.3.18 Although the focus is on commuting and 'everyday' trips, it is likely that leisure cycling will be an important use of any inter-urban routes so key leisure destinations close to the routes have also been highlighted.

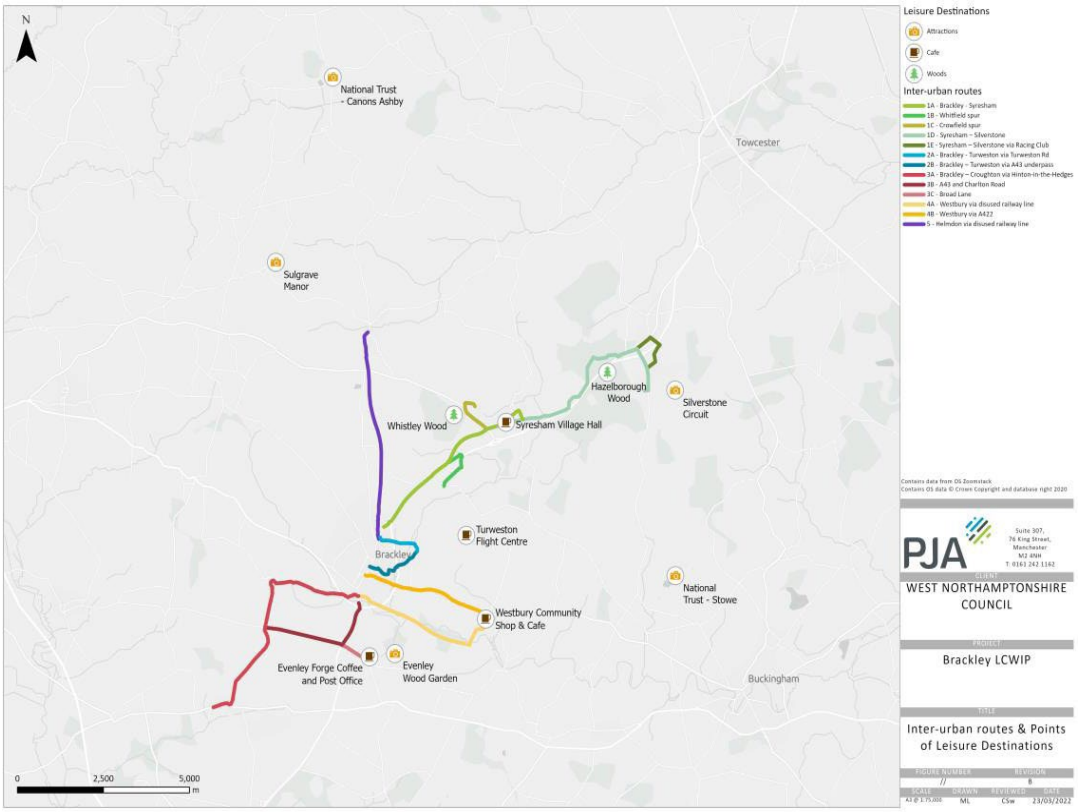

Figure 5-7: Plan of inter-urban routes

Table 5-1: Inter-urban route alignments

Route ID	Description	Length (km)
1A	Brackley - Syresham	5.60
1B	Whitfield spur	1.55
1C	Crowfield spur	1.34
1D	Syresham – Silverstone	6.09
1E	Syresham – Silverstone via Racing Club	1.67
2A	Brackley - Turweston via Turweston Rd	1.29
2B	Brackley – Turweston via A43 underpass	1.82
3A	Brackley – Croughton via Hinton-in-the-Hedges	6.94
3B	A43 and Charlton Road	3.58
3C	Broad Lane	1.28
4A	Westbury via disused railway line	4.69
4B	Westbury via A422	4.40
5	Helmdon via disused railway line	5.74

5.4 Route audits

5.4.1 Prior to undertaking site audits, a desktop review was completed using the Route Selection Tool detailed in Chapter 4 to provide a high-level overview of existing conditions for cycling on the identified corridors and identify key sections for review on site.

5.4.2 The purpose of the site audits was to review the alignments identified in the desktop review to better understand the on-site conditions and feasibility of progressing future routes. The project team visited all the identified routes by cycle including the PROW.

5.5 Design recommendations

5.5.1 Based on the findings from the RST audits, design recommendations were made for each inter-urban route. Key design recommendations are informed by LTN1/20 and vary depending on conditions including traffic volumes and speeds and any constraints. Types of infrastructure recommended include:

- Traffic-free routes or sections of route
- Shared use footway/cycleways
- Traffic calming such as priority give ways, pinch points and speed humps

- Crossings such as underpasses and signalised crossings (Toucans/Pegasus)

5.5.2 Although the focus of the design recommendations is on walking and cycling, the large network of bridleways in the area and high levels of equestrian use mean it will be important to accommodate equestrians where possible including considerations around widths, crossing types (e.g. use of Pegasus crossings), and joining up or extending the network.

5.5.3 The site visit demonstrated that the disused railway route between Brackley and Evenley is not deliverable so an alternative route along the A422 has been identified.

5.5.4 The key findings and design recommendations for each route are summarised in Appendix D.

5.6 Costings

5.6.1 The LCWIP guidance provides high-level costings which are recommended to generate initial costings for walking and cycling measures. The below table summarises costs from the LCWIP guidance and additional costs which would be relevant to the future costing of the inter-urban routes.

Table 5-2: Indicative cost estimates for inter-urban routes

Intervention type	Description	Unit	Typical costs	Source
Junction/Crossing	Remodelled major junction	x1	£1,600,000	LCWIP
Junction/Crossing	Toucan/Pegasus crossing	x1	£60,000	LCWIP
Signage	Comprehensive route signage	1km	£6,000	LCWIP
Inter-Urban	Quiet lanes - single road conversion w/ TRO, signs & lines	x1	£4,500	Essex CC
Cycle route	Two-way segregated track	1km	£1,300,000	LCWIP
Cycle route	Two-way light segregated track	1km	£740,000	LCWIP
Cycle route	New traffic-free route	1km	£200,000	LCWIP
Traffic calming	Carriageway narrowing w/one-way working	x1	£36,000	Wiltshire CC
Traffic calming	Double speed cushion w/ lighting/lining	x1	£10,000	Wiltshire CC
Traffic calming	Speed table w/ crossing, signage etc.	x1	£14,600	Wiltshire CC
Traffic calming	Raised junction w/ lighting, signage etc.	x1	£35,400	Wiltshire CC

6 Conclusions and recommendations

6.1 Introduction

6.1.1 This chapter briefly summarises the key recommendations for the Brackley LCWIP and the inter-urban routes. Figure 6-1summarises the combined outputs from the two workstreams to help illustrate their combined geographic scope. The plan helps to illustrate how the combined outputs would have a significant impact upon the quality of walking and cycling facilities in the borough, and in promoting alternatives to vehicular traffic in Brackley. The recommendations are intended to provide an initial framework for delivery; the precise timescales and prioritisation of measures will depend upon future funding and opportunities.

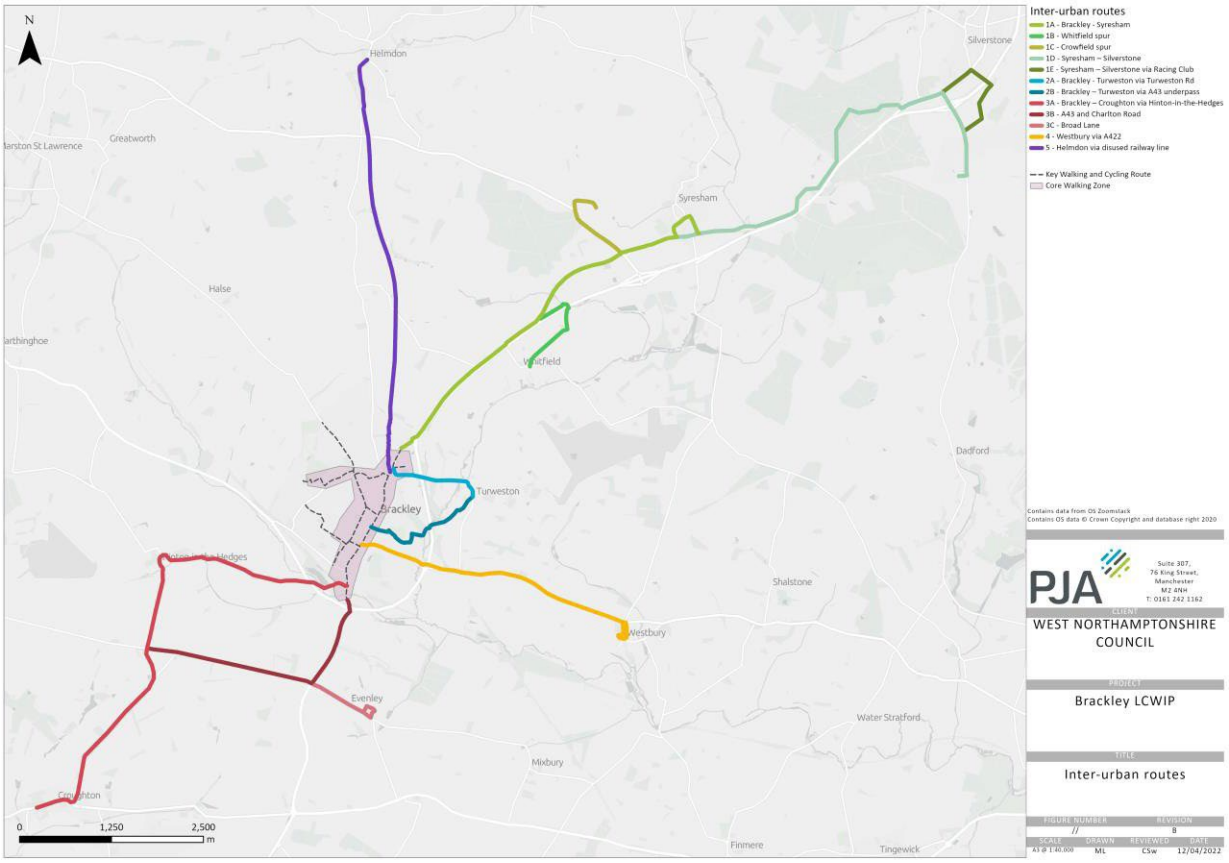

Figure 6-1: Combined Brackley LCWIP and inter-urban routes

6.2 Brackley LCWIP

6.2.1 The analysis demonstrated that a combined walking and cycling network was the most appropriate approach for Brackley due to its compact, walkable nature. A series of prioritised design clusters

for delivery of combined walking and cycling improvements in the town are therefore recommended. Rather than focusing on specific routes, the clustered approach concentrates on key areas in the town such as Manor Road and Market Place which require improvements for both walking and cycling.

6.2.2 In addition to the priority clusters, a town-wide programme of quick wins could be delivered based on a number of themes such as improving signage and wayfinding or improving priority junctions.

6.3 Inter-urban routes

6.3.1 The purpose of the wider connectivity assessment was to identify and demonstrate that there are potential alignments to develop in the future as cycling routes between Brackley and surrounding settlements. This study has identified five priority links as well as additional spurs and alternative routes. The routes identified could be delivered in their entirety or could be used to inform localised improvements as opportunities arise such as during planned maintenance of routes or junctions or to inform discussions about developer contributions during the planning process.

Appendix A Plans

Appendix B Route Selection Tool (RST) Results

Appendix C Walking Route Audit Tool (WRAT) Results

Appendix D Design Recommendations Booklet

Appendix E Brackley LCWIP costings