MILTON KEYNES COUNCIL

Local Cycling & Walking Infrastructure Plan

CITY SCIENCE

endless possibilities

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Chloe Bates & Felicia Baily	1.0	Final Report
Chloe Bates	1.1	Final Report following minor change

Prepared by:

Chloe Bates MSc MCHIT — Senior Transport Consultant, City Science

Felicia Baily — Transport Consultant, City Science

Reviewed & Approved by:

Simon Lusby CTPP — Head of Transport Planning, City Science

Contents

Executive Summary

This report sets out the Local Cycling and Walking Infrastructure Plan (LCWIP) for the Borough of Milton Keynes and the methodology used to create it.

Key findings of this LCWIP development process include an ambitious plan for the network of shared pathways (known locally as Redways) across the borough (see Figure 1-1), which was developed through the methodology set out in Chapters 2 - 5, summarising Appendix A – Evidence Base Report.

Chapter 6 then outlines how the findings of this LCWIP align with local (see Section 6.1) and national (see Section 6.2) policy, summarising 11 projects (groups of schemes) to take forward to feasibility as a priority (see Section 6.3.2)

In addition to this, wider recommendations have been made in Section 6.4, to increase usage and improve accessibility for all. These include suggested changes to the Redway design specifications (see Section 6.4.1), wayfinding & signage improvements (see Section 6.4.2), enhancements to underpasses (see Section 6.4.3), creating a sense of identity along the Redways (see Section 6.4.4), accessibility & inclusivity of the network (see Section 6.4.5) and maintenance (see Section 6.4.6).

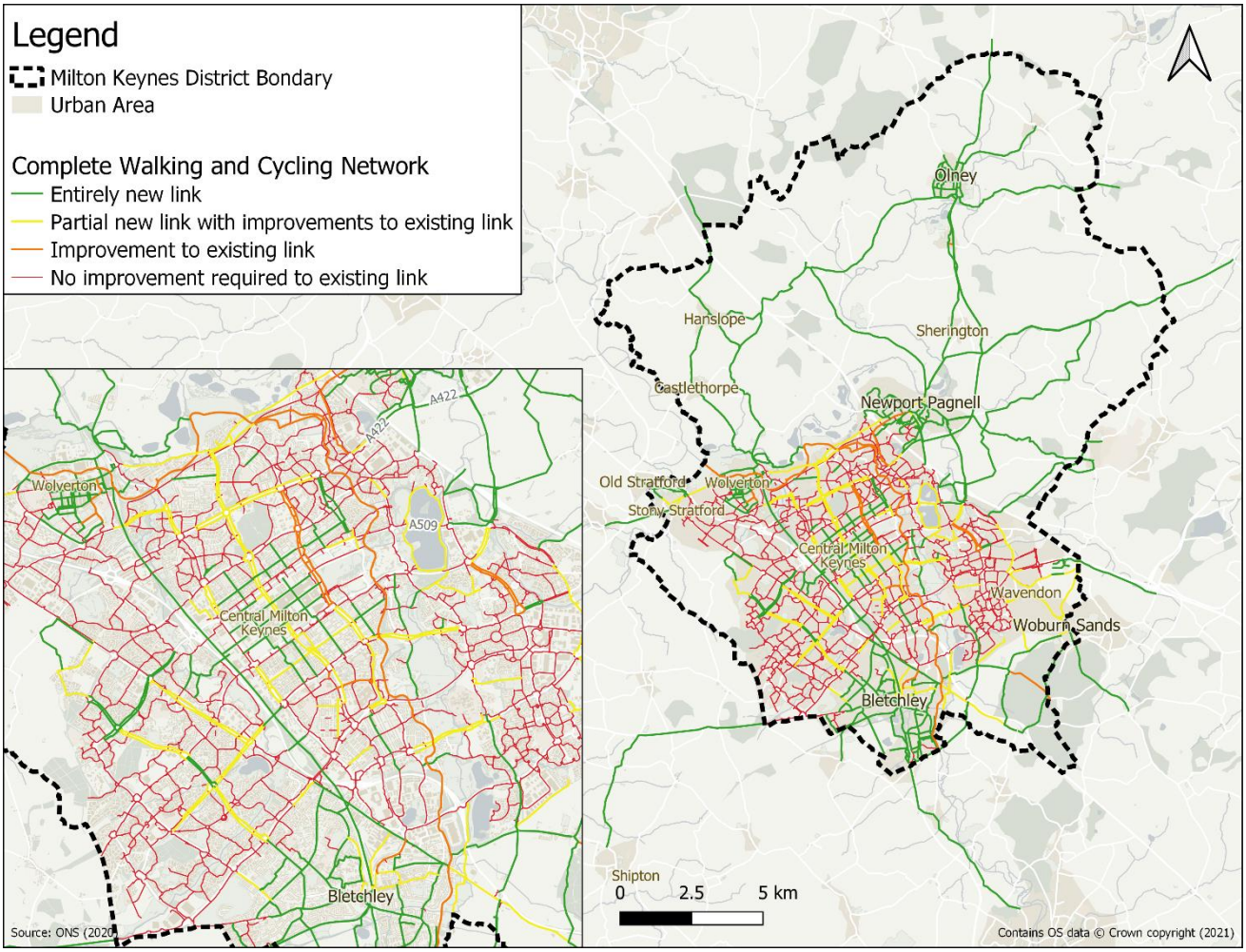


Figure 1-1: Complete proposed walking and cycling network across the Borough of Milton Keynes

1 Stage 1: Introduction & Determined Scope

1.1 Background to Milton Keynes

The Borough of Milton Keynes is the northernmost district in Buckinghamshire covering an area of 199 square miles. The Borough's largest urban area is the town of Milton Keynes with over 90% of the Borough's population living within the town's boundary. Other towns and villages within the Borough include Olney, Hanslope and Woburn Sands.

Milton Keynes lies within the Oxford-Cambridge Arc, a globally significant area between Oxford and Cambridge which supports over 2 million jobs and contributes over £110 billion to the economy each year. Central Milton Keynes is one of the fastest growing urban areas in the UK, achieving the status of the fastest-growing town or city economy in 2017 (UK Powerhouse).

Despite there being over 340km of Redways (Milton Keynes own shared paths) in Milton Keynes, the dominant mode of transport is still the private vehicle. The town is known for its unique grid-based road network and one of the highest numbers of roundabouts for a town in the UK. This road system makes it very easy to travel around the town by private vehicle, however this is to the detriment of other transport modes particularly active travel as it makes cycling routes indirect and limits opportunities for crossing points of barriers such as the railway, waterways and major grid roads.

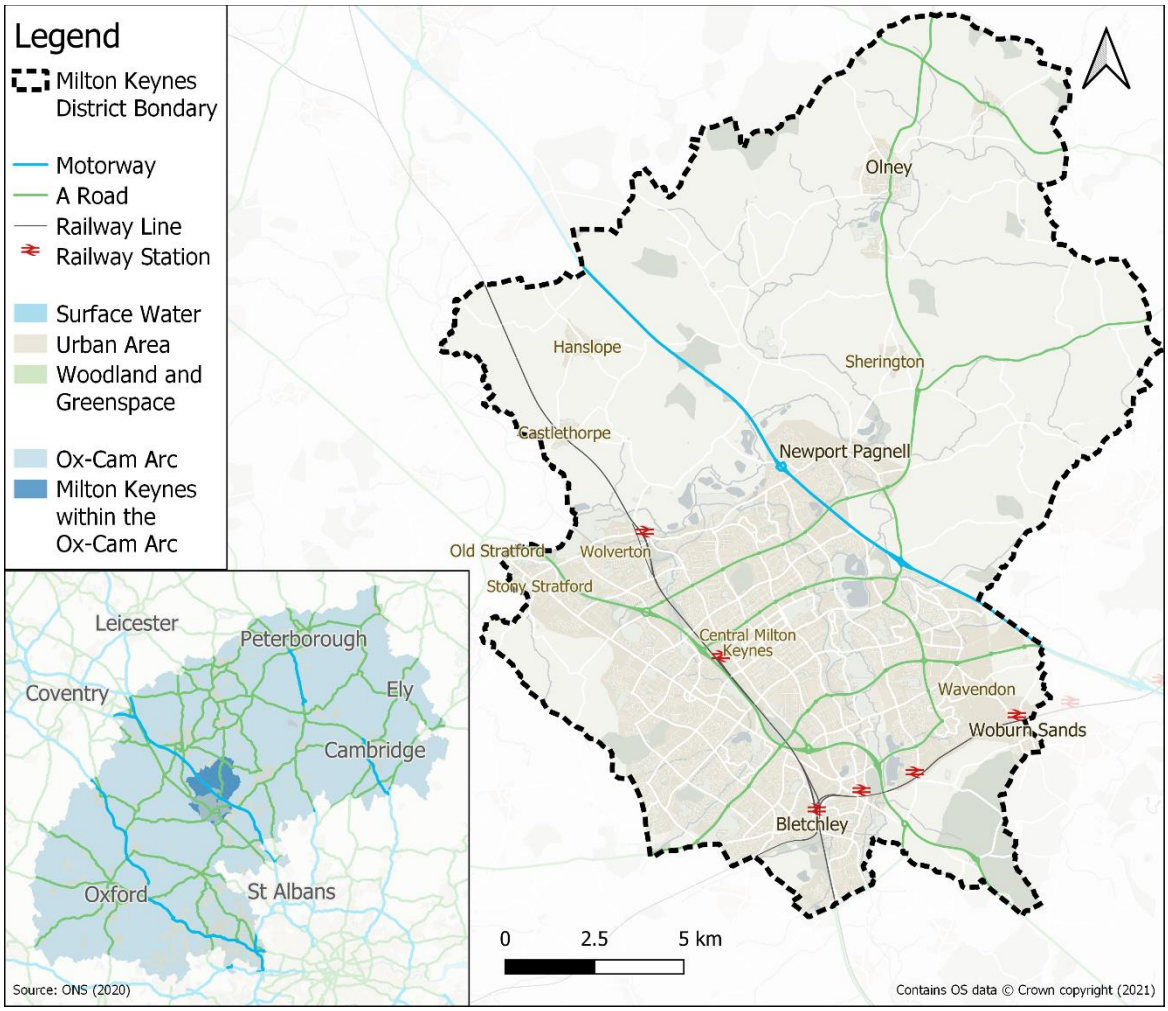


Figure 1-1: Scope Area set withing the Ox-Cam Arc

1.2 Purpose of this LCWIP

This Local Cycling & Walking Infrastructure Plan aims to provide a strategic plan for active travel infrastructure development throughout the Borough of Milton Keynes. In line with LCWIP Guidance from the Department for Transport (DfT), it will support Milton Keynes Council in creating materially better places to live and work, including:

- **Places designed for people:** Places that have cycling and walking at their heart where cycling and walking offer a safe and reliable way to travel for short journeys
- **Healthy places:** The development of a wider green network of paths, routes and open spaces
- **Better mobility:** Engagement with citizens to encourage uptake of cycling and walking, making it easy, normal and enjoyable

It will also deliver:

- Support for investment cases into future cycling and walking infrastructure
- A mechanism to engage the public and stakeholders in a clear, transparent, evidence-based process, to enhance and prioritise cycling and walking provision across the chosen area.
- An evidence base which can be used to support a Local, Neighbourhood or Local Transport Plan
- A long-term strategy that can be linked to other policies and plans
- Identified places where new strategic cycling or walking routes should be delivered by a new development and ensure the protection of alignments for future planned active travel routes

The desired outcome of this LCWIP is to produce an ambitious plan for the expansion and upgrade of the existing Redway network to encourage a higher usage by the public. As part of that, wider recommendations will be made on other supporting infrastructure which could be adopted or improved to encourage usage. This includes such infrastructure as signage and lighting (see Section 6.4), this does not include maintenance issues such as vegetation cutting or potholes.

1.3 Project Scope

The development of this LCWIP (see Figure 1-2) has included key deliverables, such as stakeholder engagement workshops, technical reports, a site visit and this final LCWIP Report.

Stage 1 – Determining Scope

Defining and agreeing the geographical scope, delivery model, governance arrangements, stakeholder engagement approach and timescales.

Deliverables: Inception workshop, Project Inception Report

Stage 2a – Stakeholder / Public / Community Engagement

Conducting initial engagement with stakeholders to introduce the LCWIP, gain feedback on existing and planned infrastructure and create a relationship which improves the success of any proposed work from the LCWIP.

Deliverables: Internal Stakeholders workshop, Members workshop

Stage 3 & 4 – Network Planning for Walking & Cycling

Collating a Long-List of infrastructure improvements as a combination of those found during this stage and those suggested by stakeholders, which are all backed by evidence. This includes mapping trip origin and destination points, identifying and classifying desire lines, establishing network density and cycling infrastructure improvements. It also includes identifying Core Walking Zones and Routes, barriers and funnels to those routes, creating an audit for them and establishing walking infrastructure improvements. Deliverables: Long-List of Schemes

Stage 2b – Gathering Evidence Base

Reviewing policy and strategy both locally and nationally, collate information and data on the existing walking and cycling infrastructure and trip demand. Identify existing and planned trip generators.

Deliverables: Site Visit Report, Baseline Report

Stage 5 – Prioritising Infrastructure Improvements

Conducting a high-level appraisal of the Long-List of schemes, including conducting high-level costing, prioritising and deliverability appraisal on the shortlisted schemes. Selecting priority schemes to take forward for further evaluation including in-depth costing, feasibility and design.

Deliverables: Appraisal Framework workshop, Scheme Appraisal Report

Stage 6 – Integration and Appraisal

Outlining how the LCWIP integrates with local and national policy, strategies and plans as well as the possible practical applications of the outputs from the LCWIP, in terms of short, medium and long term delivery timescales and priority next steps and schemes.

Deliverables: Final LCWIP Report

Figure 1-2: Stages of the LCWIP

1.3.1 Project Focus

As Milton Keynes already has an extensive Redway network for walking and cycling, the focus of this LCWIP was to identify missing links within the existing network and produce an ambitious future plan for the Redway expansion within Central Milton Keynes, and extending into Bletchley, Wolverton and Olney. This study acknowledges that missing links are not the sole issue facing the Redway network and so also provides a list of other, supporting recommendations to improve the infrastructure in the borough, such as wayfinding and design guidance.

Schemes identified are categorised as follows

- **Quick Win Network Improvements** (<2 Year Delivery Timescale)
- **Short Term Network Improvements** (2-4 Year Delivery Timescale)
- **Medium Term Network Improvements** (4-8 Year Delivery Timescale)
- **Long Term Network Improvements** (8+ Year Delivery Timescale)

This includes nine schemes identified as a priority to take forward for feasibility and transport studies in Bletchley (ongoing) and Wolverton, which each capture multiple schemes

The desirable outcomes of this study are shown in Figure 1-3, showing their alignment with the Milton Keynes Mobility Strategy (LTP4): Road Safety, Walking & Cycling & Smart Travel Strategy sub-objectives (see Appendix A – Evidence Base Report). The deliverable solutions are elements that can be delivered as part of the LCWIP and the measurable outcomes are how success can be measured over time.

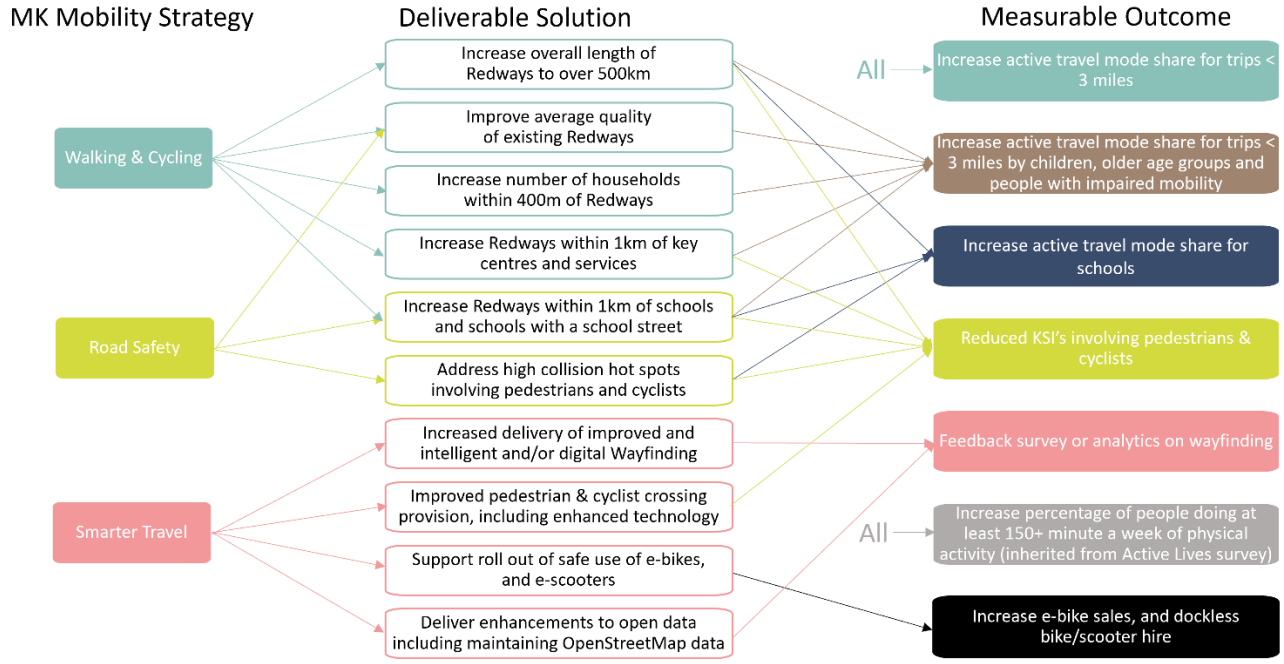


Figure 1-3: Desirable outcomes of the Milton Keynes LCWIP (DRAFT)

1.3.2 Establishing the Geographical Scope

The geographical scope of this LCWIP is the borough boundary(see Figure 1-4). In line with LCWIP Guidance, we have evaluated cycling within a 10km area around the centre of Milton Keynes (approximately a 60-minute cycle) which covers the majority of the borough.

For walking, the LCWIP guidance recommends looking at 2km from the central zone. Through discussion with the council, the following areas were established as centres of interest:

- Bletchley
- Central Milton Keynes
- Newport Pagnell
- Olney
- Stony Stratford
- Wolverton

As such, a 2km walking scope was established around each of these centres. The cycling infrastructure within the walking scope of Olney was also assessed even though this falls outside of the 10km scope of Central Milton Keynes.

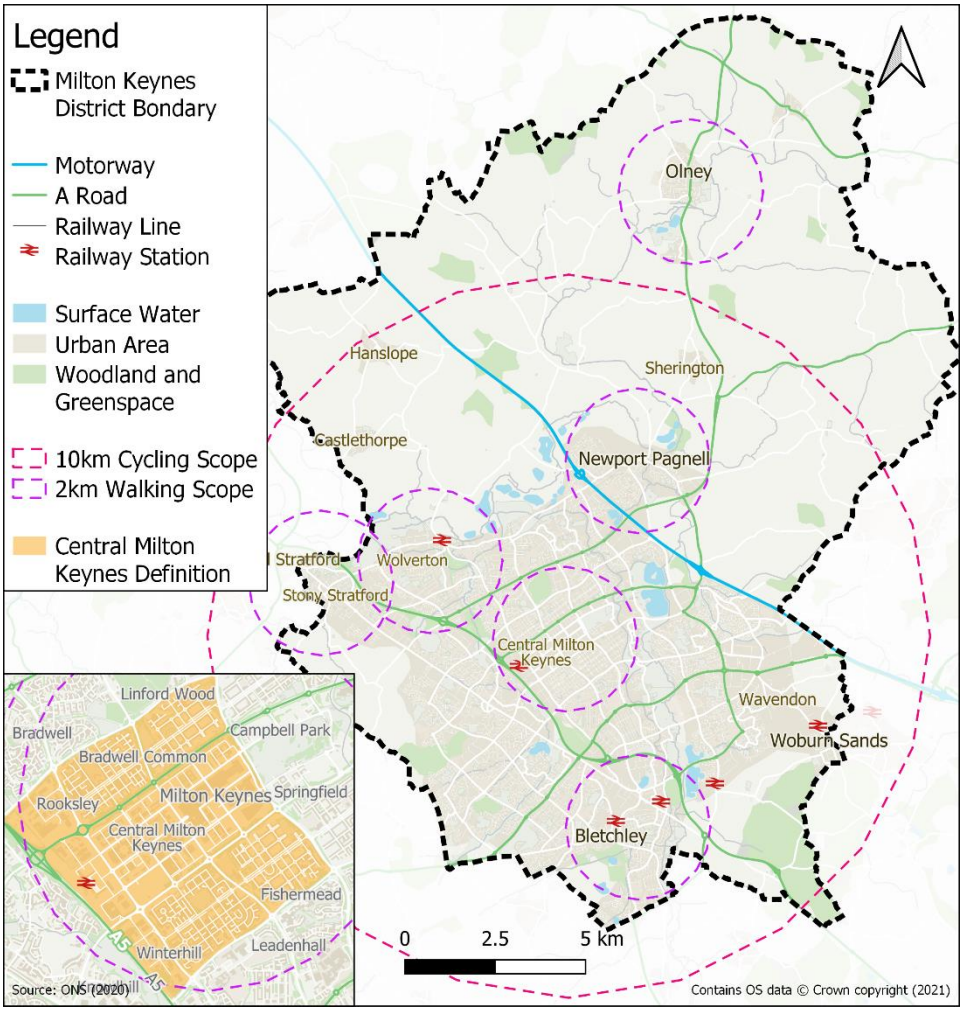


Figure 1-4: Definitions of the scope areas covered by the LCWIP

For the purpose of this project, the following definitions have been made and apply hereafter:

- **Central Milton Keynes (CMK)** includes not only the area enclosed by the A509, A5, H6 Childs Way and the B4034, but also the residential areas of Bradwell Common, Conniburrow, Fishermead, Oldbrook. This is shown in the inset in Figure 1-4.
- **Milton Keynes Town** encompasses Central Milton Keynes (CMK) and the residential areas around it up to but not including the surrounding towns of Stony Stratford, Wolverton, Newport Pagnell, Bletchley, Wavendon and Woburn Sands.

2 Stage 2: Evidence Base

Chapter at a Glance

This chapter summarises Stage 2 of the LCWIP process, consisting of development of an evidence base, including the policies reviewed (see Section 2.1) and the data that was analysed (see Section 2.2). Whilst compiling the Evidence Base, stakeholder engagement was undertaken to understand the local perception of the network. The findings from this are summarised in Section 2.3. A site visit to Milton Keynes was also undertaken, details which and the subsequent findings are summarised in Section 2.4.

2.1 Policy Review

The policies that were reviewed as part of the evidence base covered local and national policies focussed on active travel and relevant wider policies (see Figure 2-1). A key focus of these policies is the need to increase active travel within the Borough, both to:

- Benefit the environment by reducing private vehicle use to decrease transport emissions
- Improve the health of the resident population

The Redways are a defining feature of Milton Keynes active travel network. Their high design standards and wide coverage make walking and cycling a more attractive option for many within the town. Priorities for the future investment, as outlined within these policies, include the upgrading of Redway Super Routes and the expansion of the network beyond Milton Keynes Town. This LCWIP is anticipated in many of these policies as a useful tool in the prioritisation of the future infrastructure development.

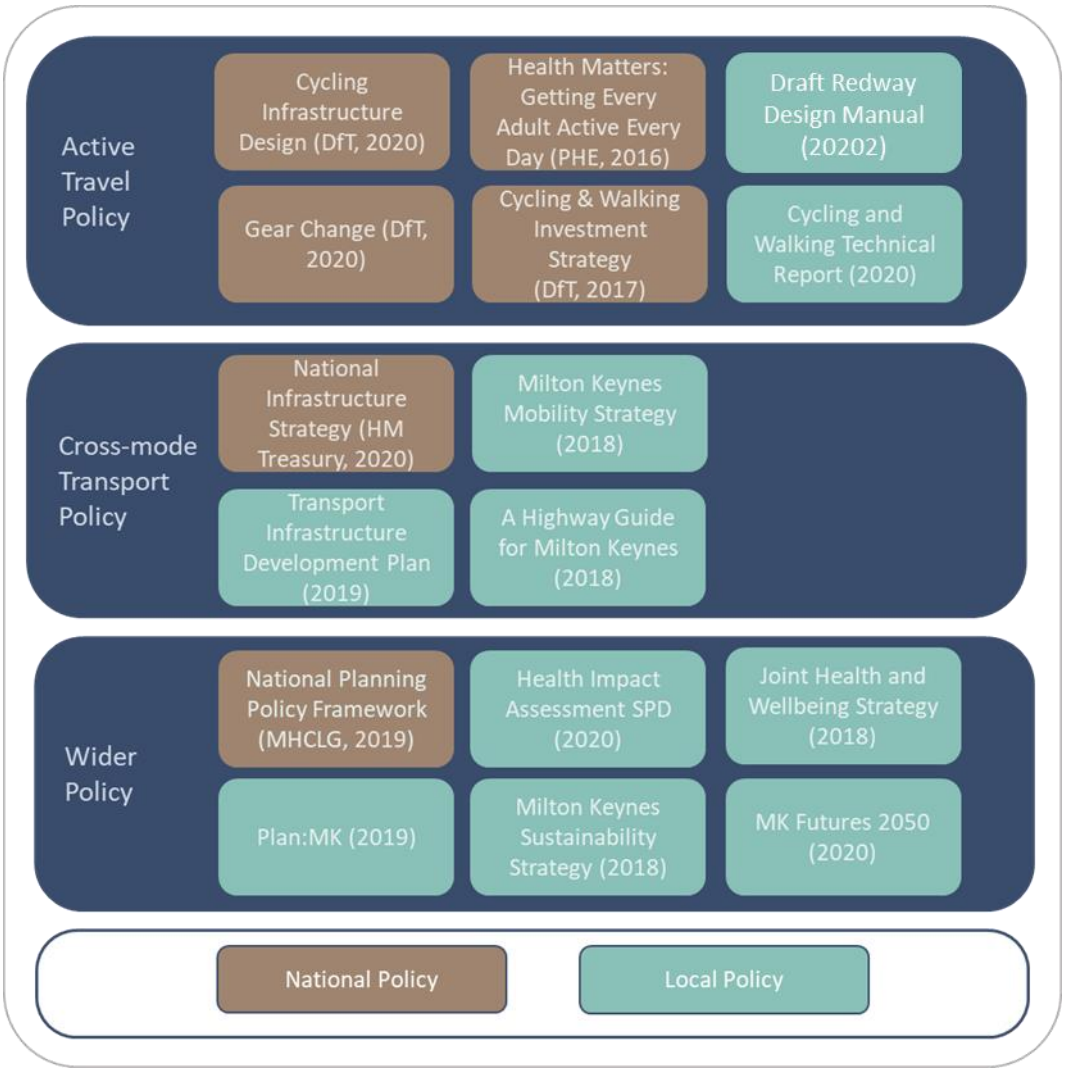


Figure 2-1: Summary of the Policies reviewed in the evidence base

2.2 Data Review

Following a review of local and national policies, data was collected and analysed on the existing infrastructure, population demographics and travel demand within Milton Keynes. This data is documented in the Evidence Base produced as part of this stage of the LCWIP process (see Appendix A – Evidence Base Report).

Data reviewed within the evidence base can be categorised as

- Network analysis of the existing walking and cycling network (see Section 2.2.1)
- Population demographics (see Section 2.2.2)
- Travel demand (see Section 2.2.3)

2.2.1 Existing Walking and Cycle Network

The Redway network (see Figure 2-2), plays a major part in the walking and cycling infrastructure within Milton Keynes Town. These shared-use paths for pedestrians and cyclists cover 340km across Central Milton Keynes and beyond. The Redways also form part of two National Cycle Routes (Route 6 and Route 51) which pass through the borough (see Figure 2-2).

Although Infrastructure density is good in Milton Keynes town, the surrounding market towns of Wolverton, Newport Pagnell and Bletchley have very poor Redway coverage in comparison. This is because these smaller towns date back to before Milton Keynes New Town designation and it's Redway network. Additionally, the wide, segregated design of Redways makes them difficult to retrofit to an established urban area.

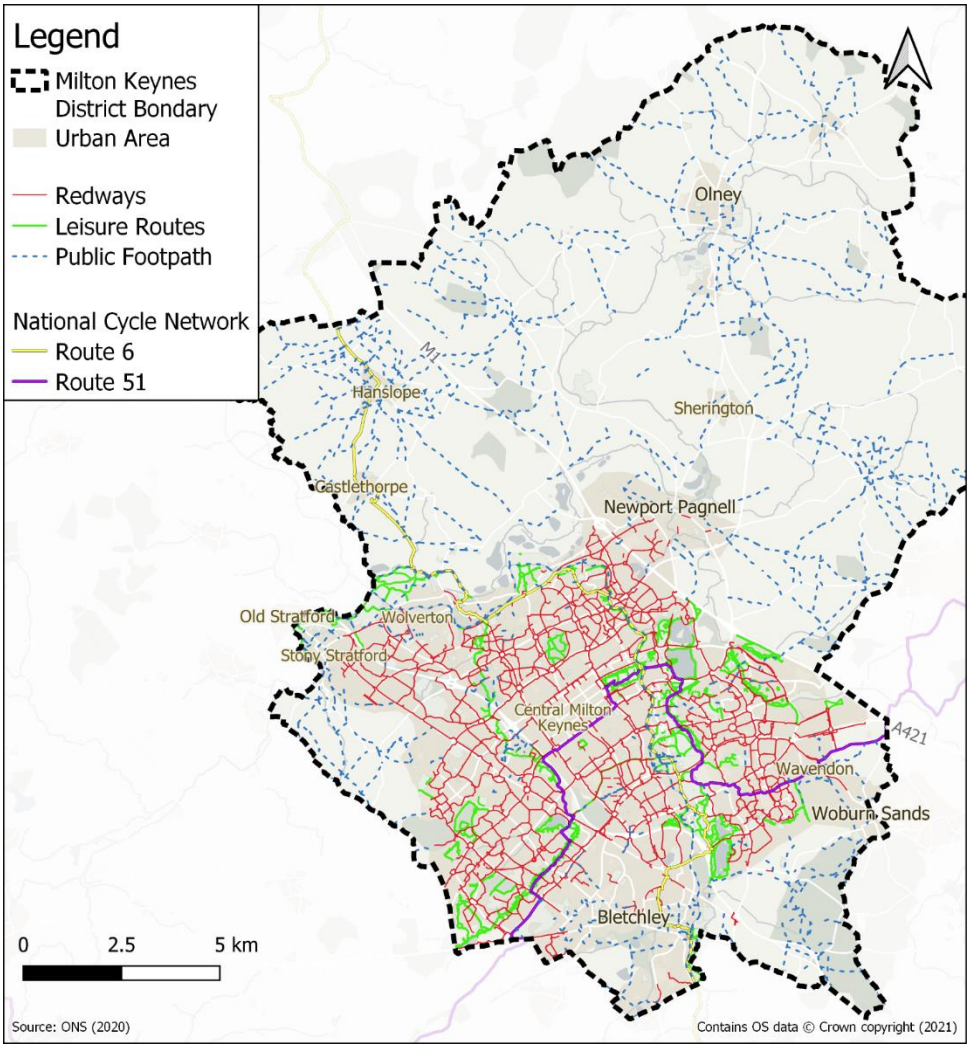


Figure 2-2: Existing Active Travel Routes throughout the Borough of Milton Keynes

2.2.1.1 *Proposed Network – Redway Super Routes*

The Transport Infrastructure Development Plan (Milton Keynes Council, 2019) proposed the creation of a network of Redway 'Super Routes' across the existing Redway network in Milton Keynes Town, see Figure 2-3. The routes proposed to become Redway Super Routes have high flows and provide a grid-like network across the town to allow for clearer routing to access key services like the town centre.

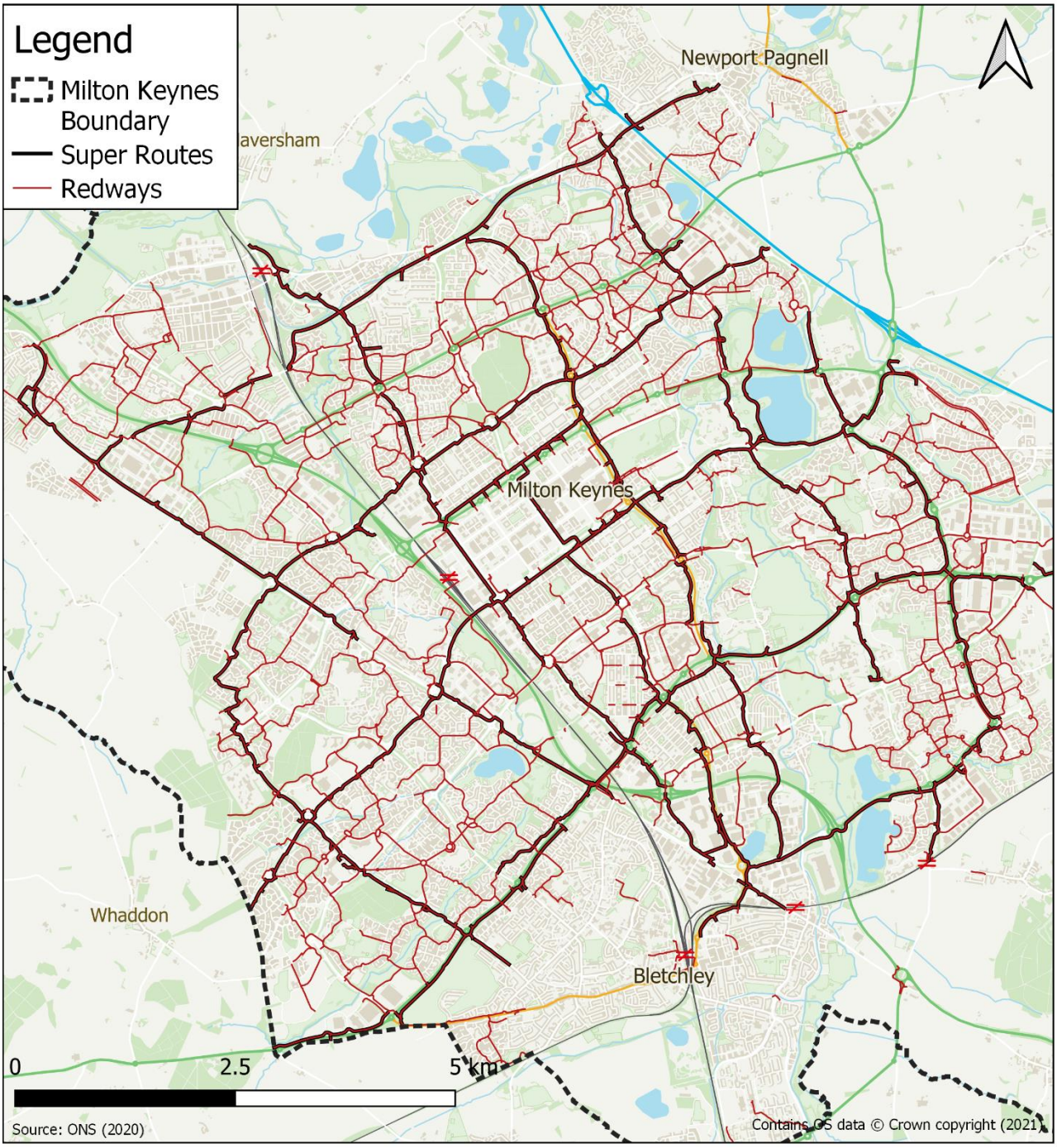


Figure 2-3: Proposed Redway Super Route network across Milton Keynes

2.2.1.2 *Travel Catchments*

These isochrones help with identifying key routes to/from these key locations, as well as highlighting gaps in infrastructure. 30-minute walking and cycling isochrones were created for each of the following key destinations:

- Milton Keynes Central Station
- University Hospital
- Central Milton Keynes Shopping Area
- Bletchley
- Newport Pagnell
- Olney
- Stony Stratford
- Wolverton

Figure 2-4 shows the walking isochrones produced for the whole borough, with detailed maps of the individual areas are shown in and Appendix A – Evidence Base Report. These isochrones are good indicators to where infrastructure is lacking but they must be combined with a sense check to determine if there is a necessity for such infrastructure. For example, in Olney and Newport Pagnell there is poor connectivity to the north-east but as there is nothing there except farmland, there is little need to provide infrastructure at this time.

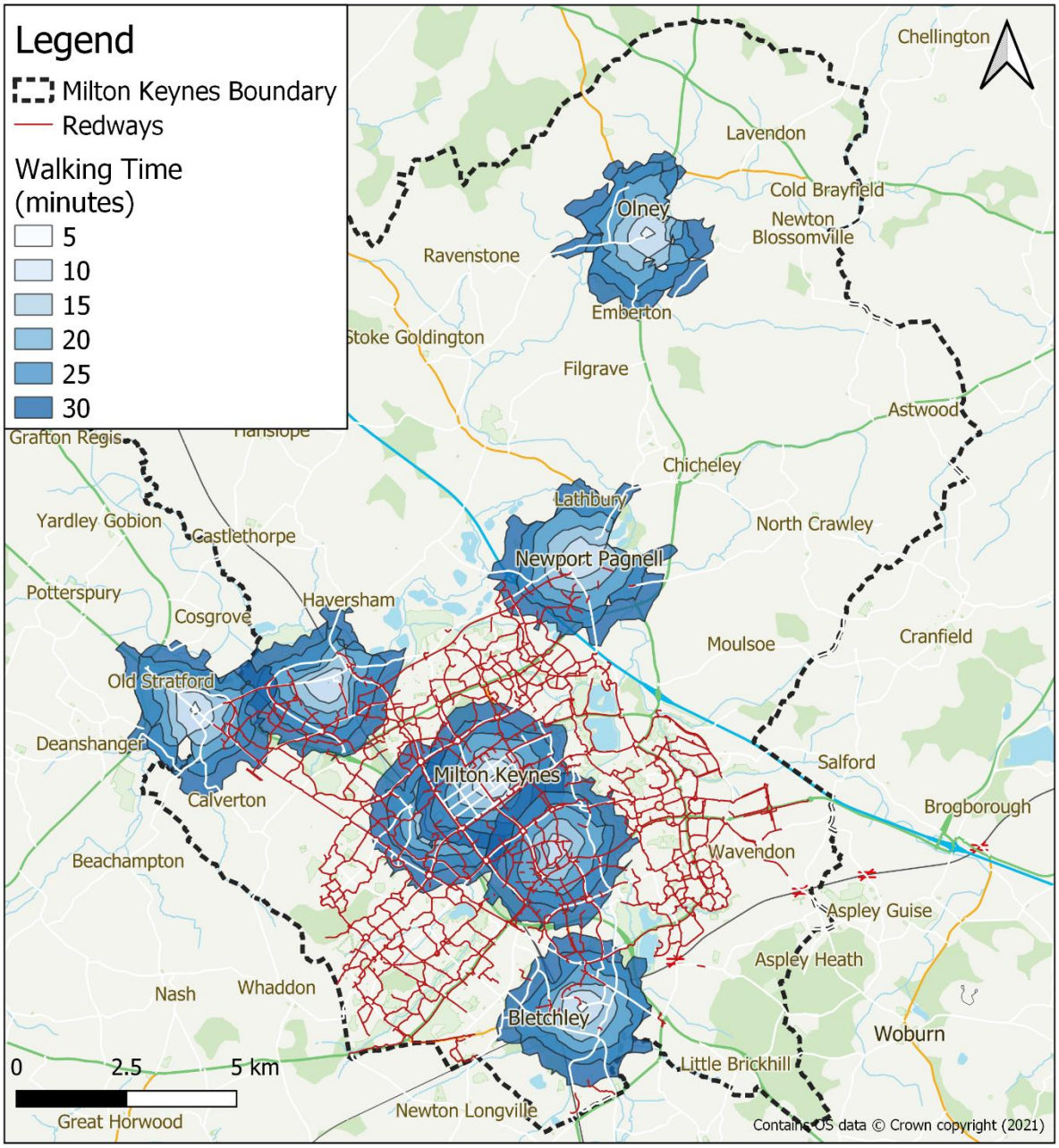


Figure 2-4: 30-minute Walking Isochrones for key locations over the borough

Similarly cycling isochrones were created from each of the key destinations to show how far cyclists could get from key destinations (see Figure 2-5). The majority of the borough is within a 30-minute cycle from a key destination which implies there is great potential for a shift to active travel to reach key destinations. The individual cycling isochrones are shown in Appendix A – Evidence Base Report.

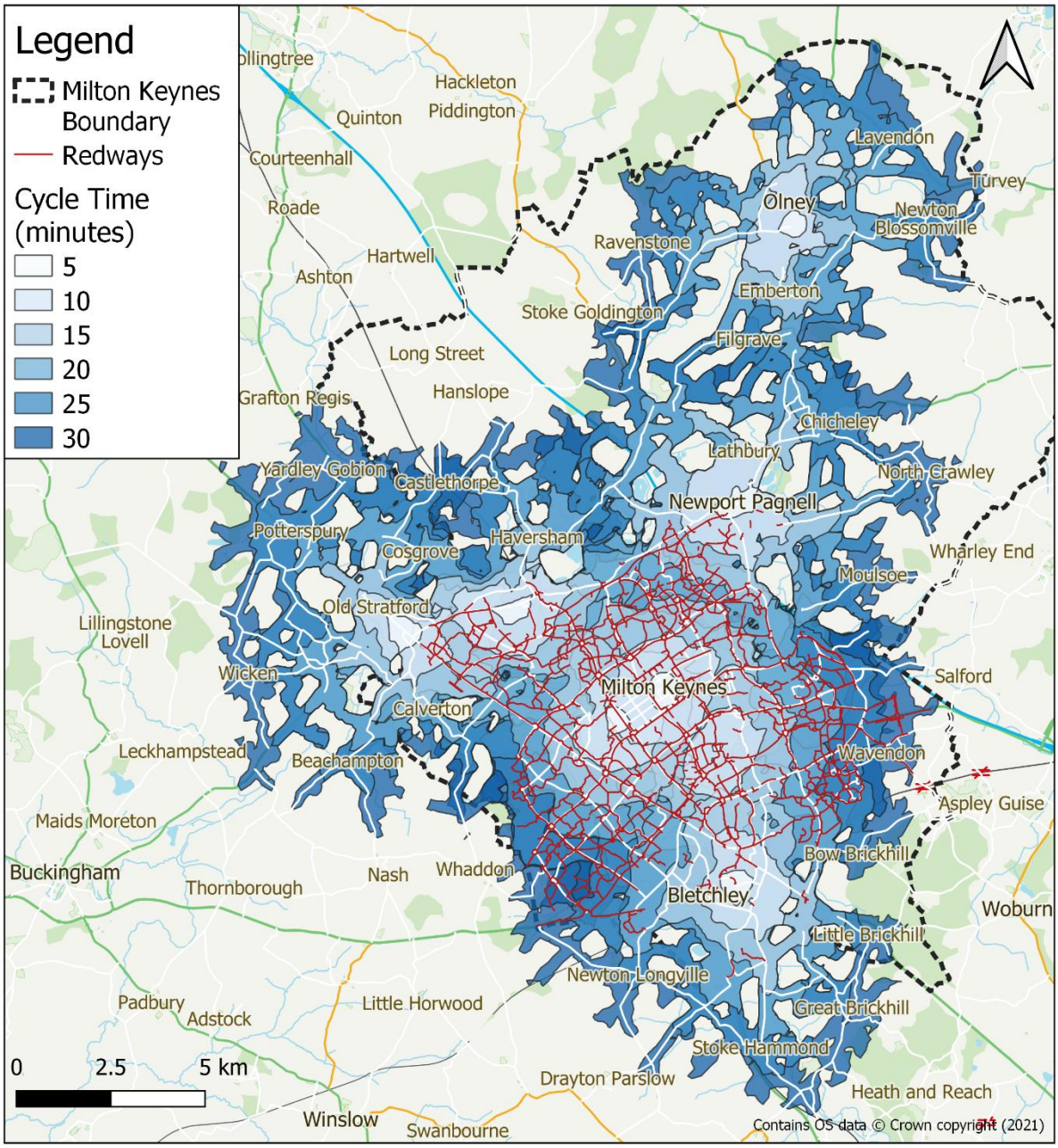


Figure 2-5: 30-minute cycling isochrones for key locations over the borough

2.2.2 Population Demographics

Population demographics within the borough were analysed to give perspective of the area, these include current and future population, deprivation indices, population distribution and physical activity levels. These were then used in later stages of the project to highlight areas in need of improvement, with priority for investment aimed at improving areas with high deprivation and low physical activity.

Demographics included within the analyses were:

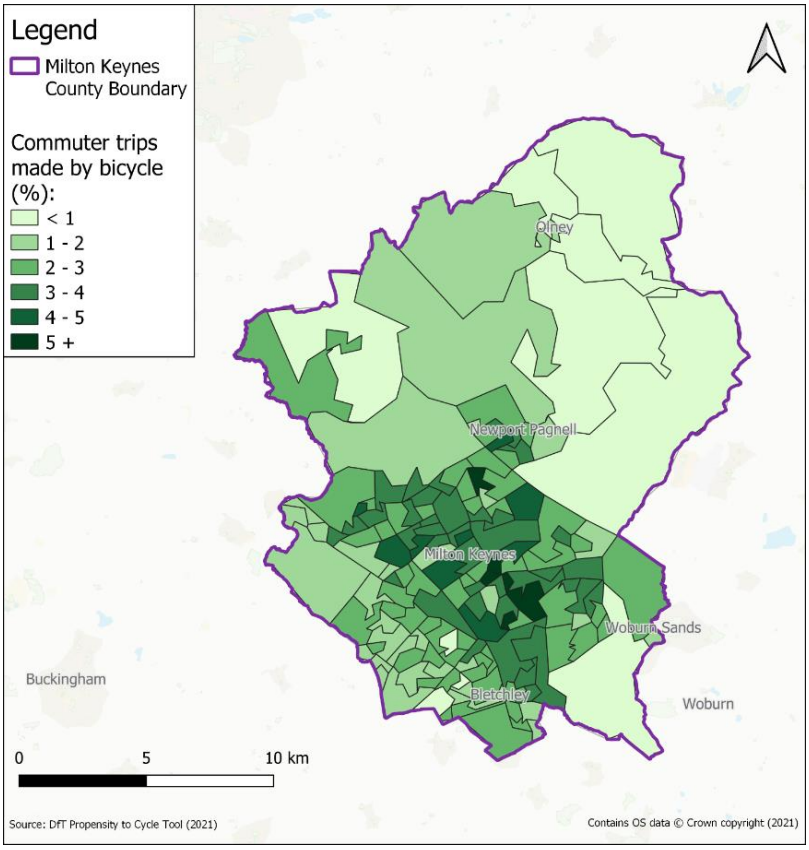
- Population including growth, age demographics and population densities
- Limiting long term illness
- Deprivation Index
- Physical Activity Levels

2.2.3 Demand

Demand for travel over the borough was analysed for both existing active trips and short-distance car journeys which have the potential to be converted to active modes. This data was collected primarily using Census 2011 data with supporting data sets including live count sites along the Redway network, the National Travel Survey, route tracking data from the running app Strava and journey data from E-Scooter hire companies.

The following sections provide some examples of the demand data analysed within the Evidence Base.

2.2.3.1 Cycle Mode Share



The uptake of cycling within the Borough of Milton Keynes is assessed in detail using data from the Department for Transport's Propensity to Cycle Tool (see Figure 2-6). This shows that commuting trips by bike are predominantly located in the urban areas in and around Central Milton Keynes, with rural areas typically having less than 2% commuting mode share for bikes.

Figure 2-6: Propensity to cycle (%), Census 2011

2.2.3.2 Strava

In addition to analysing Census 2011 data, more recent data was utilised from the running/cycling app and social platform Strava, which also provides insight into leisure movements. Whether a popular route is used for leisure or commuting can usually be deciphered by looking at the times at which the route is most popular. The Strava data mostly tracked commuting journeys for cyclists and leisure journeys for pedestrians. An example of the Strava output is shown in Figure 2-7. This highlighted popular leisure routes around the Willen and Caldecotte Lakes.

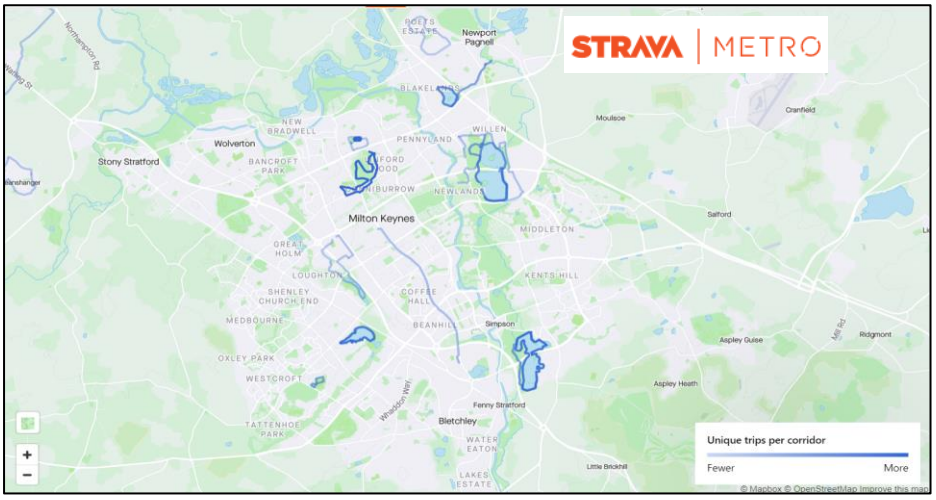


Figure 2-7: Walk, Run, Hike data for Milton Keynes, Strava Metro

2.2.3.3 E-Scooter Hire

Milton Keynes is home to multiple e-scooter trials with three companies operating in the borough; Lime, Spin and Ginger. This study received data from Lime and Spin on where popular routes and pick-up/drop-off locations for e-scooter users are.

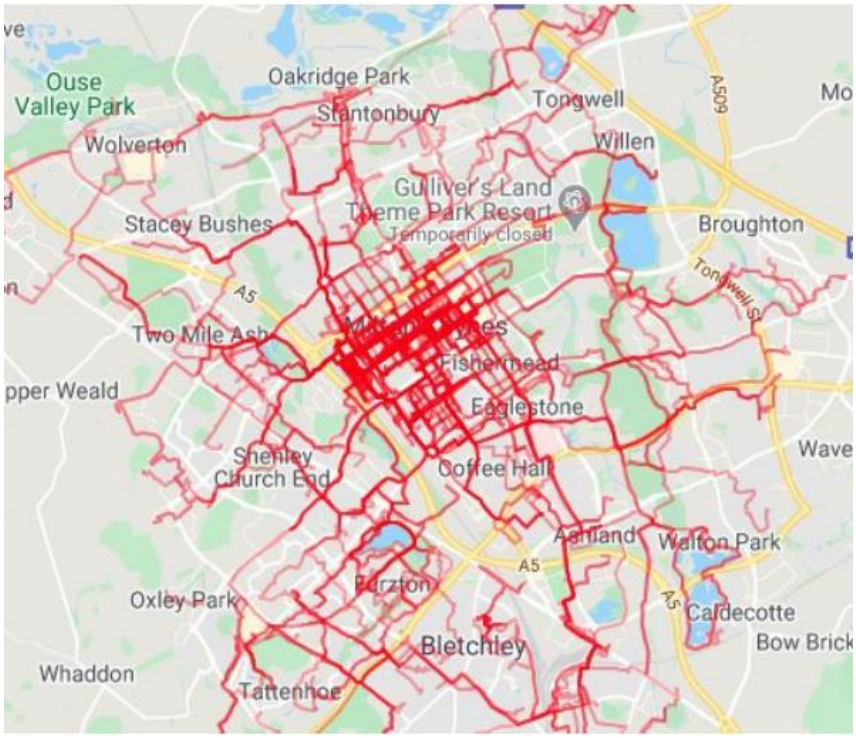


Figure 2-8: Location of Lime 'Hot Routes' through Milton Keynes March 2020-2021

Data from Lime was provided from between March 2020 – March 2021. Figure 2-8 shows the locations of 'hot routes' across Milton Keynes, where 'hot routes' are defined as routes which have over 100 trips taken within a month. The 'hot routes' are located largely around the central Milton Keynes area with a few routes reaching out to the surrounding towns of Bletchley, Wolverton and Newport Pagnell.

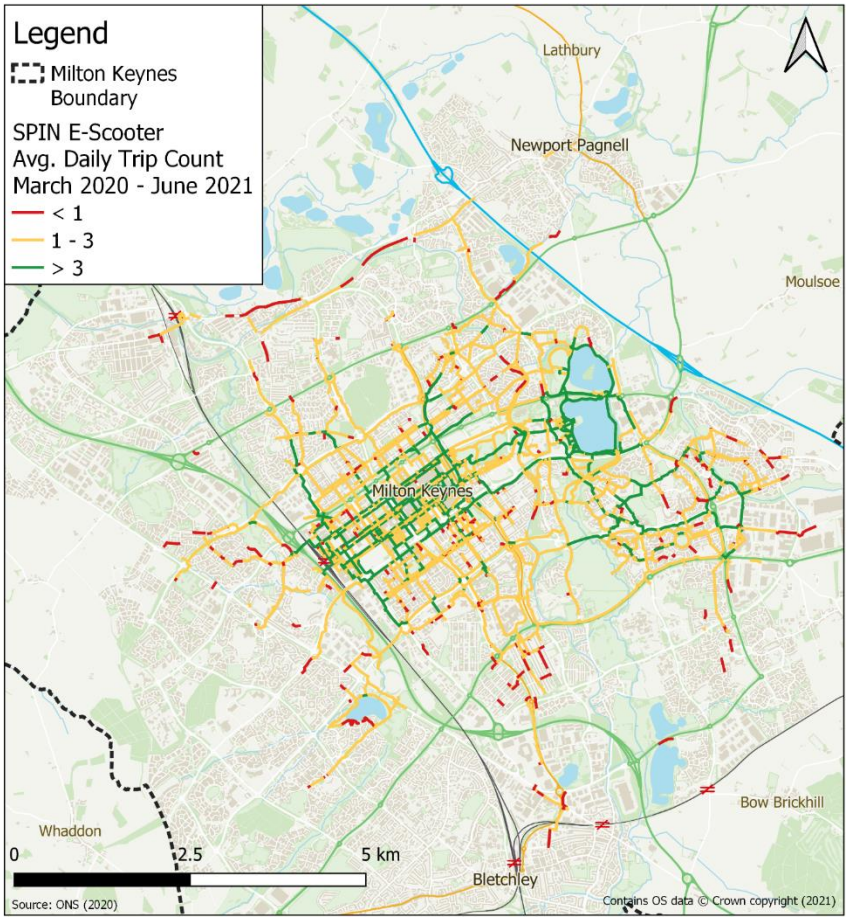


Figure 2-9: Spin e-scooter hire data March 2020 - June 2021

Data from Spin between March 2020 – June 2021 (see Figure 2-9), shows the routes taken by all Spin e-scooter hire during this period. Popular areas are again centred around central Milton Keynes and out to the east around popular leisure routes such as Willen Lake. This trial is a smaller scale to Lime and so doesn't have as many routes heading out towards the surrounding towns and suburbs.

2.3 Stakeholder Feedback

2.3.1 Stakeholder Consultation

Prior to City Science's appointment to the LCWIP, Milton Keynes Council put out an invitation for the public to contribute to the project (see Figure 2-10) by providing feedback on their experience of walking and cycling in Milton Keynes and to highlight issues. An email was also sent out by the council to local stakeholders to request suggestions of potential schemes to be included in the LCWIP.

The consultation received over 70 individual replies, suggesting over 100 schemes. Contributors through this consultation included:

- Members of the Public
- Parish Councils and Councillors
- The Green Party
- MK Cycle Forum
- Cranfield University

Figure 2-10: Tweet put out by Milton Keynes Council to gather public feedback on walking and cycling (Twitter, January 2021)

2.3.2 Consultation Responses

Consultation responses received by Milton Keynes Council were collated and analysed. These proposed schemes were categorised and combined with the other evidence in the network planning stages.

Schemes proposed through the consultation ranged from improved cycle parking for key destinations to strategic, long-distance missing links connecting villages and Milton Keynes. Some suggestions were very specific, giving precise routes or locations for changes whereas others were more general, suggesting improvements for the whole network or for a specific area (e.g. around the hospital). Both types of suggestions were considered within the network planning stages (see Figure 2-11). Not all of the schemes proposed in consultation response have been included in the long-list, schemes not included in the long-list were commonly excluded due to a lack of supporting evidence or because the scheme was not within the scope of this LCWIP.

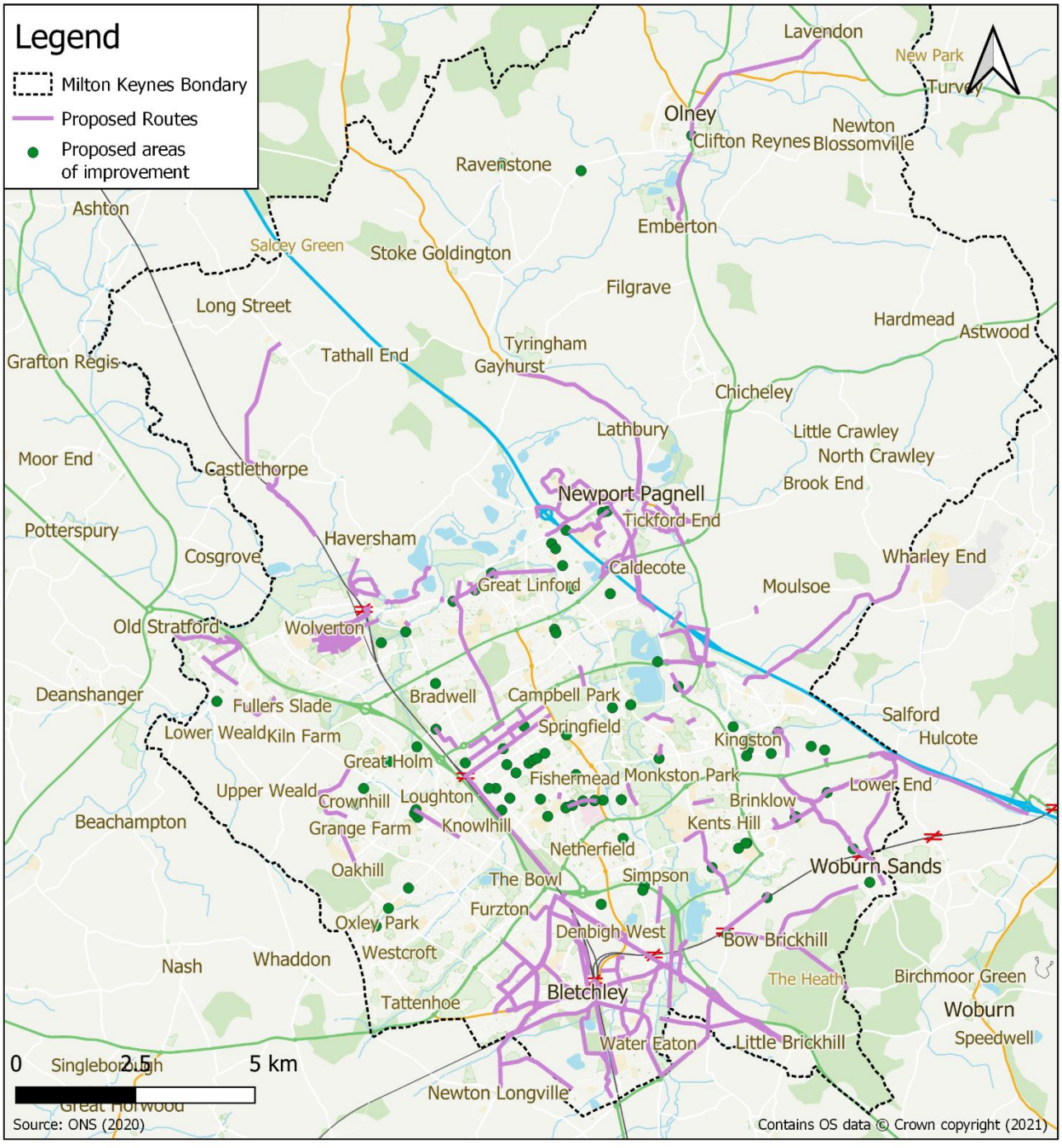


Figure 2-11: Location of schemes proposed through stakeholder consultation

2.3.3 Stakeholders Workshops

Stage 2 of the LCWIP included two stakeholder workshops:

- An Internal Stakeholders' workshop involving Milton Keynes Council Officers from teams including Placemaking, Highways, Transport Policy and Planning, Leisure and Community and Sports Development
- A Members workshop with local councillors for Shenley Brook End, Stony Stratford, Bletchley East Ward, Bradwell Ward, Wolverton and Bletchley West Ward

The challenges and opportunities highlighted in these workshops are summarised thematically below.

Topic	Summary of Views
Routing & Network Coverage	• Generally Redway network coverage in the centre and surrounding towns was felt to be good. • A missing link between Central Milton Keynes Station and the main shopping district was identified. • There is not much infrastructure within the market towns themselves, and difficult to retrofit. • Its perceived that there is discontinuity of Redways as they divert around the grid roads. • Routes often end abruptly and there are short pieces of remote Redway around the main town. • Raised that it is important to link the Redway network into transport hubs and all new estates.
Signage & Wayfinding	• Consensus was that signage is good in places, but lacking through estates on non-Redway routes that join between network sections. The signage that does exist is inconsistent and is often damaged. • It was also raised that the lack of redness can mean it's difficult to tell who can use the space.
Safety & Maintenance	• There is a perception that the Redways are unsafe, particularly centred on the underpasses. Initiatives to encourage group cycling were mentioned to improve the feeling of safety. • As Redways are shared spaces there is an issue of a speed differential between uses. • Concern was also raised over maintaining proper segregation between cyclists and road traffic, avoiding badly designed cycle lanes that do not protect cyclists from the road. • The notion of giving Redway users priority over road users at junctions was well received, but viewed that each location should be assessed on a case by case basis. • Although maintenance falls outside of the scope of this LCWIP, its consideration needs to be considered through the process. It was suggested that investment in new infrastructure schemes should be supported by a maintenance plan and commitment to fulfil it.
Other factors that affect Mode Choice	• It was suggested that the large urban sprawl of Milton Keynes limits the ability to encourage walking and cycling due to distance. • An anecdotal increase in walking and cycling has been observed during the COVID-19 pandemic however, there is potential that people will revert back to old habits. • The efficiency of the local grid road network is perceived to be to the detriment of the Redway network as it provides a quicker and more efficient route for the car, compared to the Redways. • When considering the network, the importance to understand what people are using the it for was raised (e.g. leisure or commuting). • Complementary infrastructure, such as green spaces, may support people's decision to use the walking and cycling network. The council could also make use of local art to make the underpasses brighter, happier spaces to improve public perception of these spaces.
Accessibility	• The importance of ensuring that the cycleway network is accessible to everyone was raised. Supporting infrastructure such as dropped curbs, benches and toilet facilities allow the elderly and those with health conditions to enjoy the network. Additionally, it was highlighted that some of the gates designed to slow cyclists and some crossings are too narrow for a bike trailer. • The council has a commitment to be dementia friendly city, with a plan to be developed over the autumn, which is something to be kept in mind with any proposed interventions. There are already group walking events held in Milton Keynes for those with long-term health conditions. Cycle safety sessions were also suggested

2.4 Site Visit

On the 18 May 2021, four City Science team members undertook a site visit to inspect key sites and missing links in the Milton Keynes study area. They were joined by two members of the Milton Keynes Council team for part of the day.

The purpose of the site visit was to:

- Gain a better understanding of the active travel environment
- Confirm our findings from the baseline evidence report
- Meet with the client
- Identify and develop concepts for additional schemes
- Review the priority sites identified in the long-list

The routes followed are shown in Figure 2-13. On these routes, the team was able to sample a range of topographies including residential areas (e.g. Bradwell Common and Furzton), surrounding towns (e.g. Wolverton and Bletchley) and key central destinations (e.g. the main shopping centre and the hospital).

Identity	• The lack of standardisation detracts the sense of identity of the Redway • Potential to make use of landscaping, rail heritage & street art to make Redways a cultural attraction
Signage & Wayfinding	• Poor wayfinding undermines trust in the network • Lack of signage • Variety of signage formats creates confusion • Some inaccurate and vandalised signage • No sense of hierarchy between Redway Super Routes & regular Redway
Missing Links & Routing	• Missing links were identified • Routes are generally governed by the grid roads leading to indirect & discontinuous routes that end abruptly
Safety	• Lack of segregation between cyclists & pedestrians • Proximity to fast roads and general lack of priority gives sense of vulnerability to Redway users • Poor surfacing on many Redways • Remote & poorly lit routes can make users feel unsafe
Accessibility	• Steep gradients to take Redways under/over roads make • Parked cars create a barrier to accessing the Redways
Crossings & Rights of Way	• Priority is often unclear and Redway users rarely given priority • Users must often cross wide & busy roads • Often next to no infrastructure to assist Redway users in crossing safely

Figure 2-12: Summary of observations from site visit

The key observations from the visit are summarised in Figure 2-12. Having made these observations, we added more missing links and Redway upgrades to the long-list of schemes.

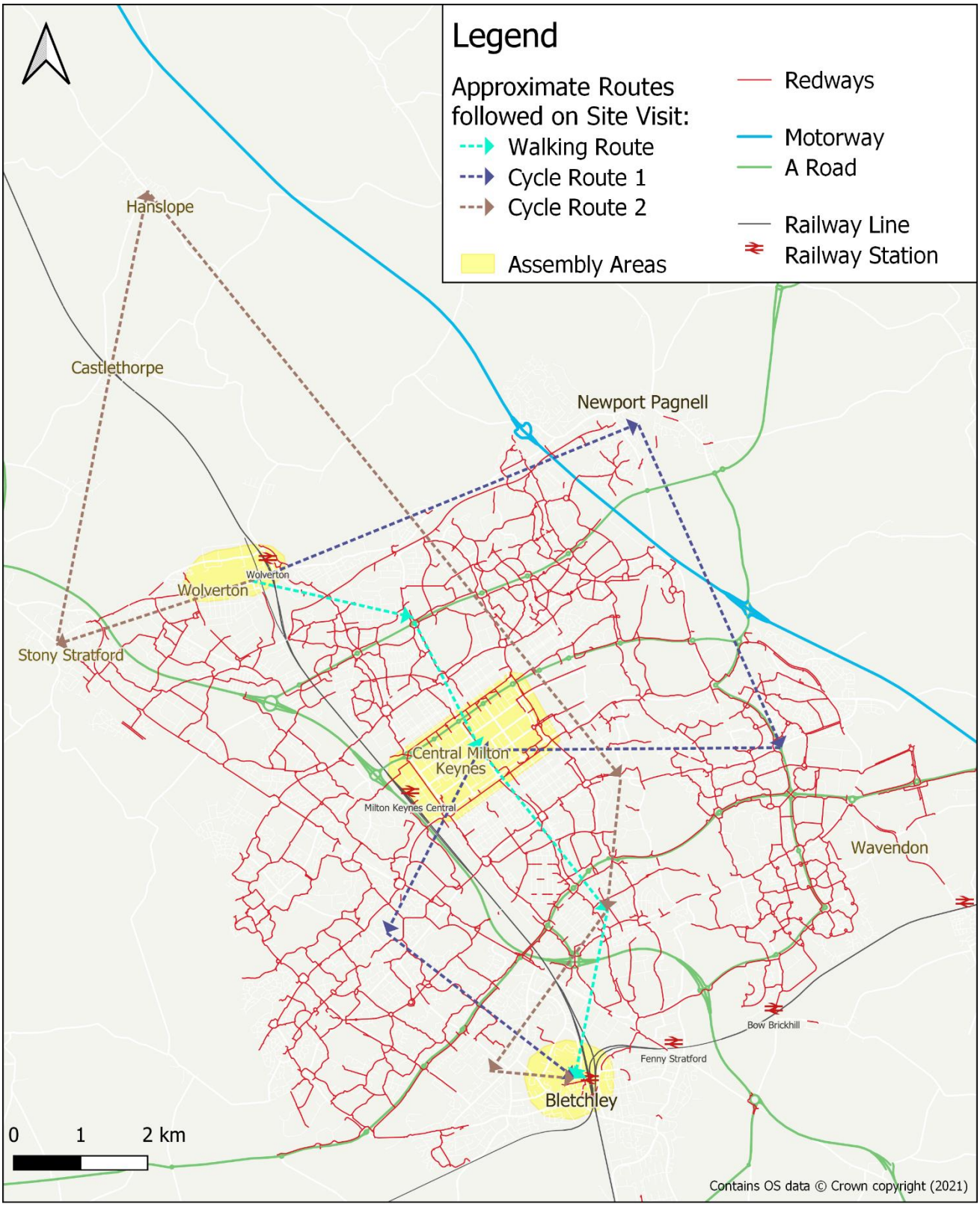


Figure 2-13: Map of the routes taken by members of the team on the site visit day

3 Stage 3: Development of an Interborough Network (Cycling & Long-Distance Walking)

Chapter at a Glance

This chapter summarises the adapted Stage 3 of the LCWIP process consisting of development of a network of cycling and long-distance walking links. Section 3.1 sets out the methodology used to develop an interborough network of Redways including baseline data analysis (see Section 3.1.1) and gap analysis (see Section 3.1.3). The full interborough network that has been developed is presented in Section 3.2.

LCWIP guidance traditionally splits out the network planning stages into cycling and walking, for this LCWIP the network planning stages were carried out slightly differently. Both walking and cycling were considered throughout the whole network planning process as the main infrastructure intervention considered as part of this LCWIP were new Redways. As Redways are shared spaces, providing a new Redway link will provide infrastructure for both walking and cycling.

As such, the LCWIP Stages 3 and 4 have been altered from network planning for cycling and walking to development of interborough and localised Redway networks respectively.

3.1 Methodology

Development of an interborough network was developed using a multi-stage process, detailed below.

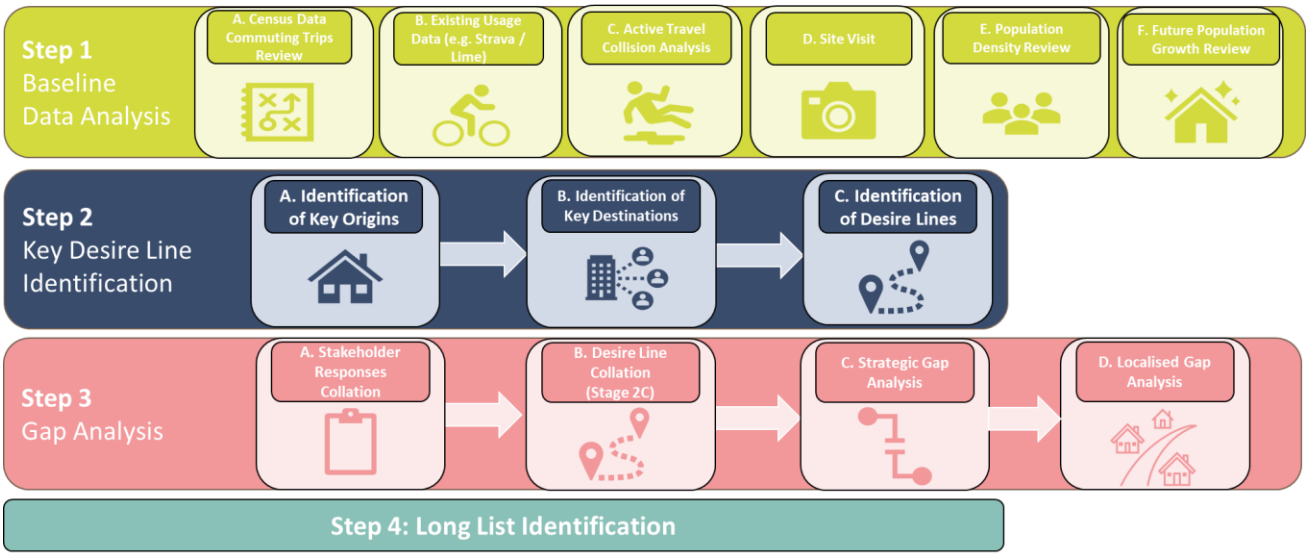


Figure 3-1: Long-list development process

3.1.1 Baseline Data Analysis

In this step the baseline data detailed in the Evidence Base (see Chapter 2) was utilised. An aggregate view of the data was applied for this stage, looking outside of the key urban areas and more at the strategic movements between areas. Key data used included desire lines, demographics data (e.g. population) and land use data to show key employment and growth area sites.

3.1.2 Key Desire Line Identification

In accordance with LCWIP Guidance (DfT, 2017), the identification of the main origin and destination points should be used as a core element of developing potential cycle routes.

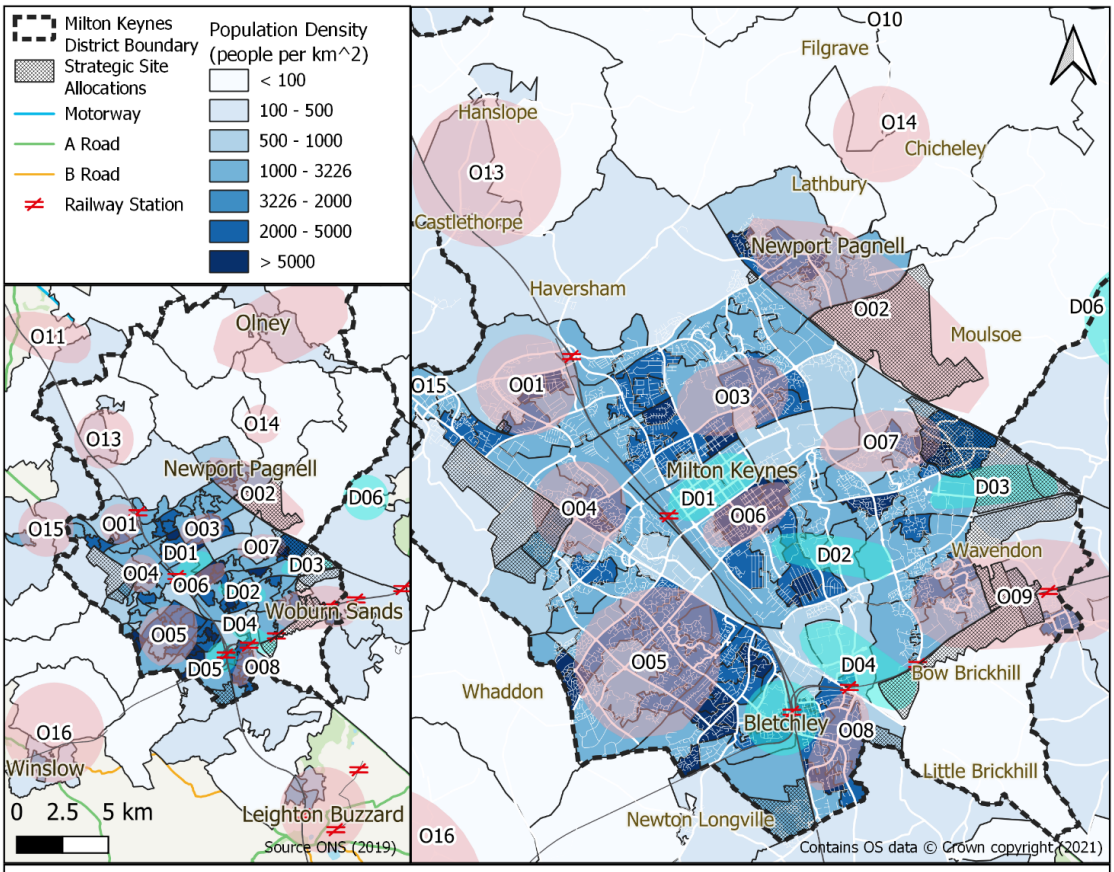
3.1.2.1 *Origin & Destination Identification*

Key trip origins were assigned within key residential areas across Milton Keynes and the wider TTWA and key destinations based on commercial and employment information (see Figure 3-2).

- Key origins include Olney & Surrounds, Newport Pagnell and Milton Keynes East Strategic Urban Extension, Wolverton, Wavendon and the South East Milton Keynes Strategic Urban Extension
- Key destinations include Central Milton Keynes, Cranfield Airfield, Cranfield University, Bletchley, Milton Keynes University Hospital, Magna Park and Denbigh North

These were derived using a variety of data sources including:

- Residential population density (see Appendix A – Evidence Base Report)
- Existing geospatial land use information, such as large commercial and employment sites (see Appendix A – Evidence Base Report)
- Future strategic residential development allocations within Plan:MK (see Section 2.1)



Origin Clusters

- O01 Wolverton
- O02 Newport Pagnell & Milton Keynes East Strategic Urban Extension
- O03 Conniburrow, Downs Barn, Neath Hill, Pennyland & Downhead Park
- O04 Two Mile Ash, Great Holm & Crownhill
- O05 Shenley Lodge, Furzton, Emerson Valley, Shenley Brook End, Westcroft & Tattenhoe
- O06 Oldbrook & Fishermead
- O07 Middleton & Broughton
- O08 East Bletchley
- O09 Old Farm Park, Wavendon & South East Milton Keynes Urban Extension

Destination Clusters

- D01 Central Milton Keynes
- D02 Milton Keynes University, Hospital & The Open University
- D03 Kingston & Magna Park
- D04 Denbigh North, Fenny Stratford & South Caldecotte Strategic Allocation
- D05 Bletchley
- D06 Cranfield University

Figure 3-2: Key origins and destinations around Milton Keynes within the urban centre

3.1.2.2 Desire Line Identification

Once the key origins and destinations were identified, desire lines were plotted between them to represent indicative current and future cycle demand. In accordance with DfT Guidance (DfT, 2017), these desire lines were split into three categories:

- **Primary Desire Lines:** Those which have the potential to generate high cycle flows typically linking large residential areas with major trip attractors such as town centres
- **Secondary Desire Lines:** Those which have the potential to generate moderate cycle flows typically linking residential areas with key destinations such as employment sites or hospitals
- **Local Desire Lines:** Those which have the potential to generate lower cycle flows typically linking into primary or secondary desire lines.

As indicated in Figure 3-3, primary desire lines in Milton Keynes are between Newport Pagnell (and East Strategic Development site) and Central Milton Keynes, Western Milton Keynes suburbs to Central Milton Keynes and the Wavendon area (including the South East Milton Keynes Urban Extension) to Central Milton Keynes.

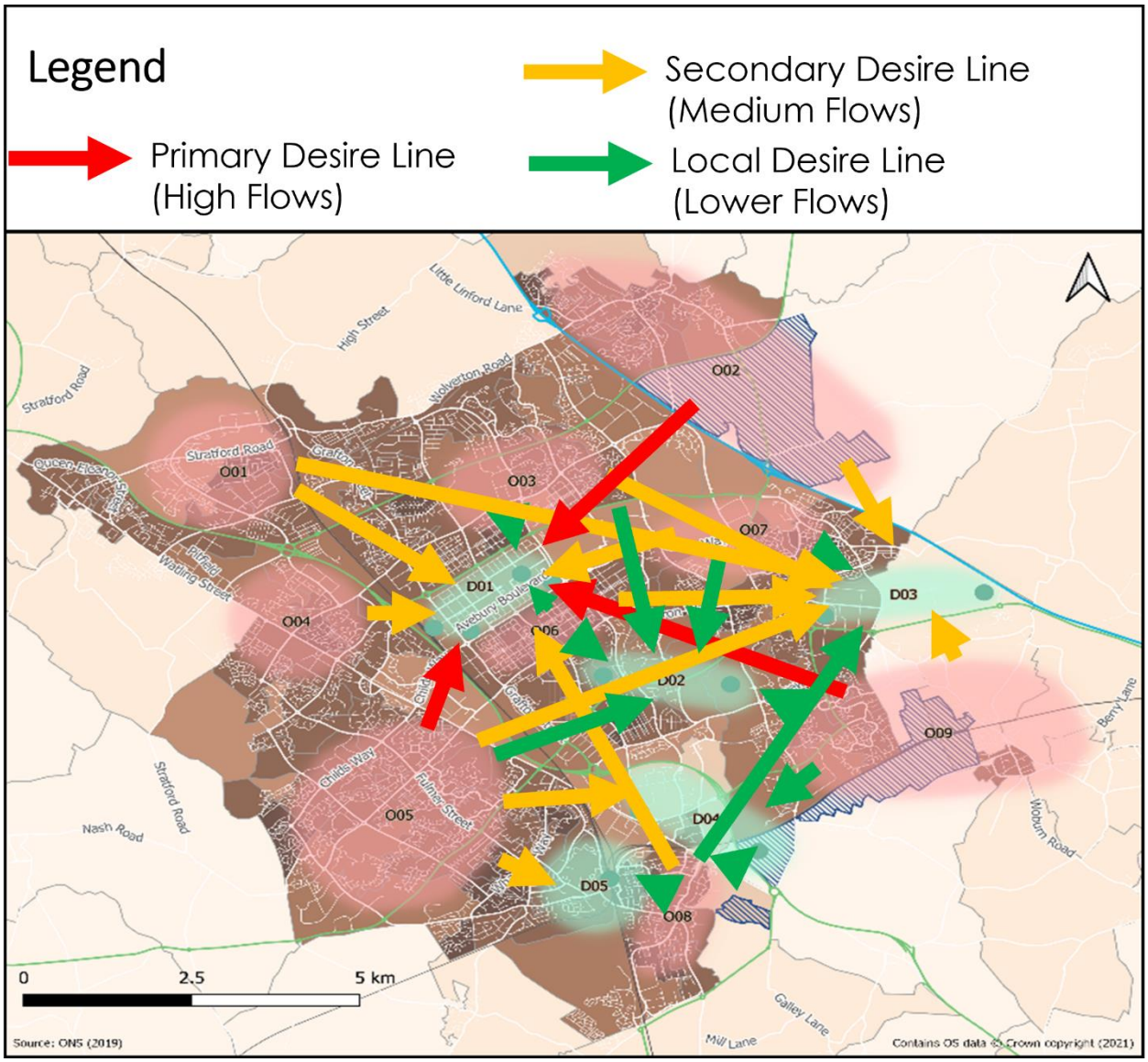


Figure 3-3: Desire lines between key origins and destinations in Milton Keynes

3.1.3 Gap Analysis

Once the key movements within the borough and between the urban areas were identified, the existing network was analysed to identify any gaps along any of the key desire lines. The following methods were used to carry out this gap analysis:

- Visual analysis of the network using the key desire lines
- The Propensity to Cycle Tool to highlight popular routes, and identifying missing infrastructure
- Application of local knowledge from the Council project team and from City Science's site visit
- Identifying missing infrastructure through residential areas
- The Rapid Cycleway Prioritisation Tool (where applicable for Milton Keynes, as outlined below)

The Rapid Cycleway Prioritisation Tool helps in the identifying of locations for new cycleways in England, and was developed to aid with LCWIPs. The tool produces two layers of routes: 'top routes' and 'cohesive network' routes. The top routes are identified by ranking roads by their 'cycling potential' using the Propensity to Cycle Tool and then selecting the routes which have the biggest potential but which also have spare space; that is, are either wide or have two or more road lanes in one direction. The tool identifies what a 'cohesive network' might look like and comprises all of the major high cycle potential corridors, including where sections of the road are narrower.

This was applied to support the evidence base (particularly stakeholder suggestions) but taking account of the limitations outlined below.

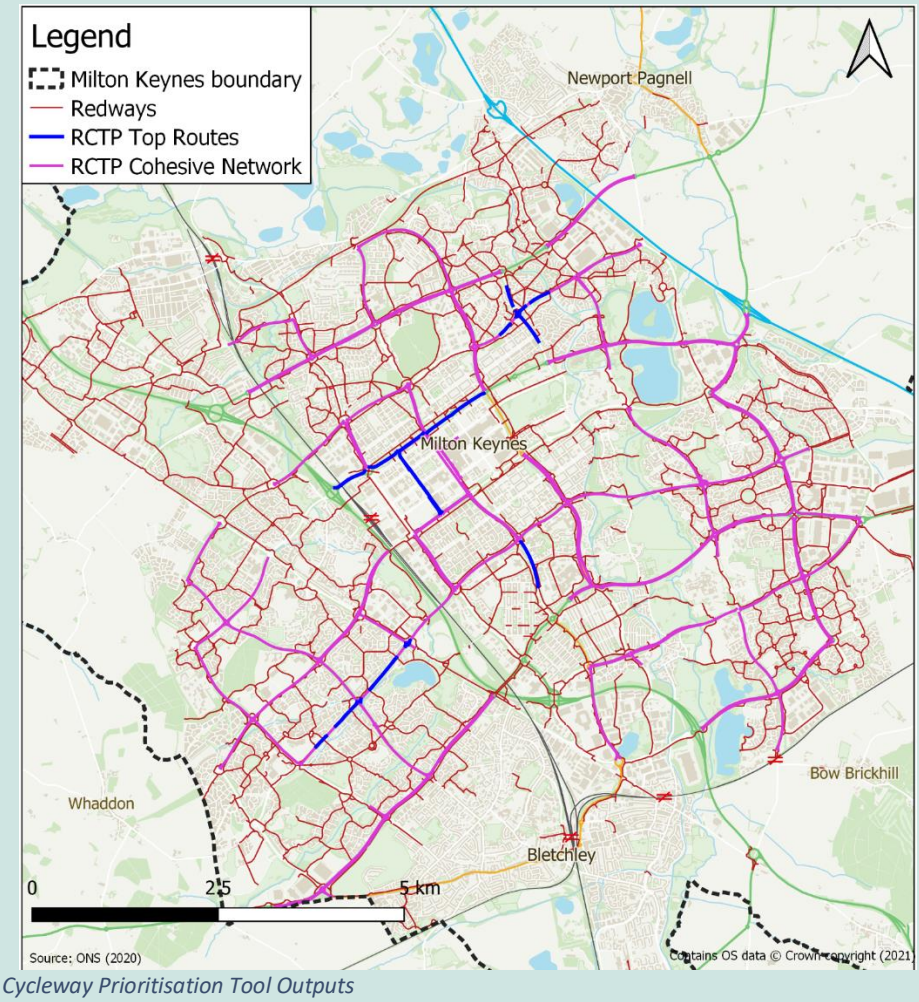


Figure 3-4: Rapid Cycleway Prioritisation Tool Outputs

Note the Rapid Cycleway Prioritisation Tool doesn't factor in surrounding green space for use by new infrastructure (available along the majority of grid roads in Milton Keynes) and highlights links as missing when the Redway is set back from the road (e.g. the top route along H5 Portway).

3.1.4 Future development schemes

In addition to the schemes proposed through this process, City Science were provided schemes which have been committed to support future developments (see Figure 3-5). Indicative Redways for all future development sites have not been identified as part of this work and will need to be reviewed on a case by case basis. However, proposed plans for these new developements have been included in the long-list for completeness. Schemes have also been suggested independent to these committed schemes which allow the supporting of future development zones.

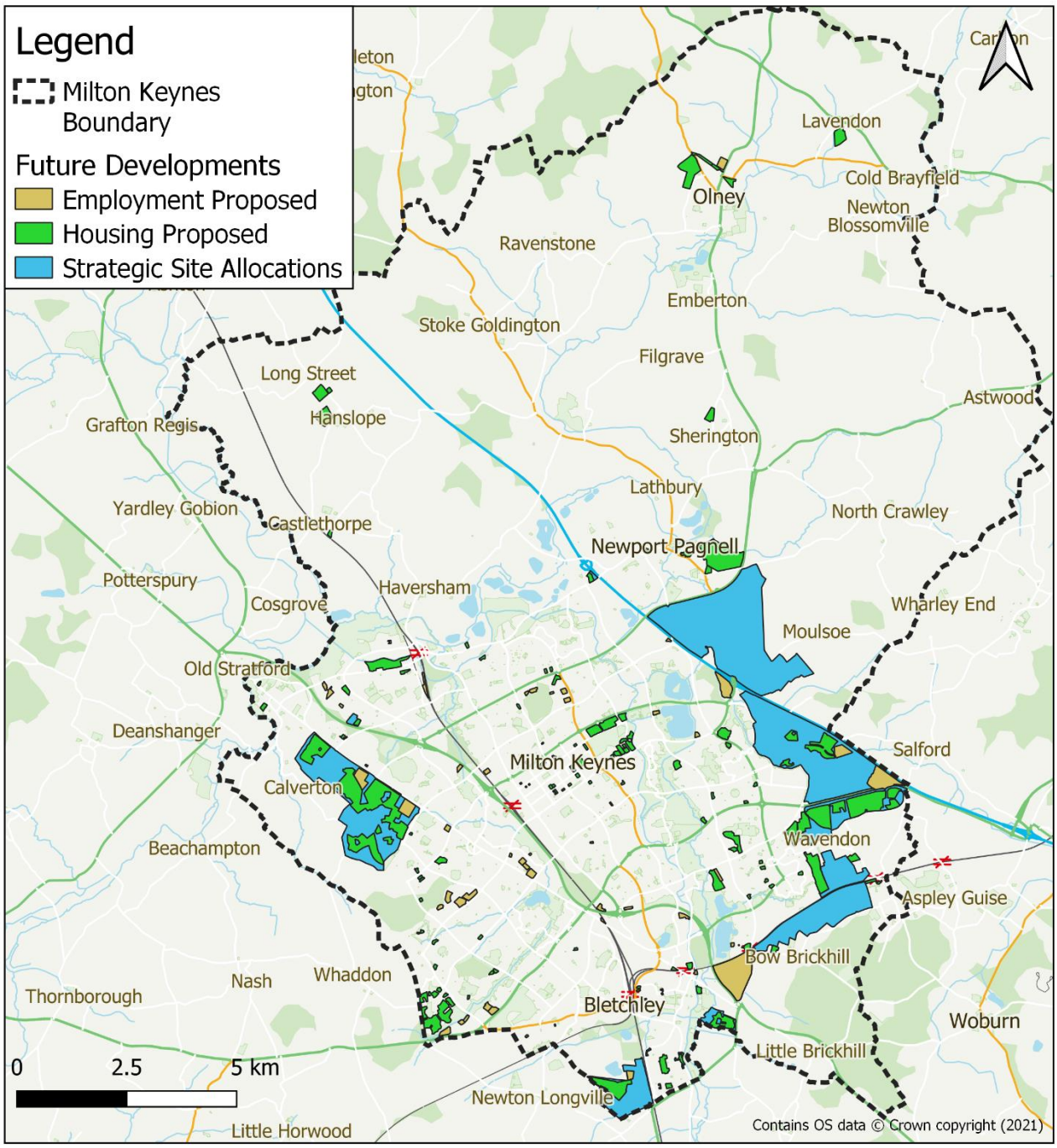


Figure 3-5: Schemes proposed as part of future developments

3.2 Interborough Network Long List

Figure 3-6 and Figure 3-7 show the Long List of schemes forming the interborough network, developed during this stage of the LCWIP. It is important to note that the routes shown in the below maps are indicative only, specific routes will be determined at design and feasibility stage. This is particularly important for some of the grid roads within Milton Keynes where this LCWIP shows a scheme on both sides of the road. This was done to indicate a scheme is needed along such a grid road with the side of the road being less important for this stage of the LCWIP.

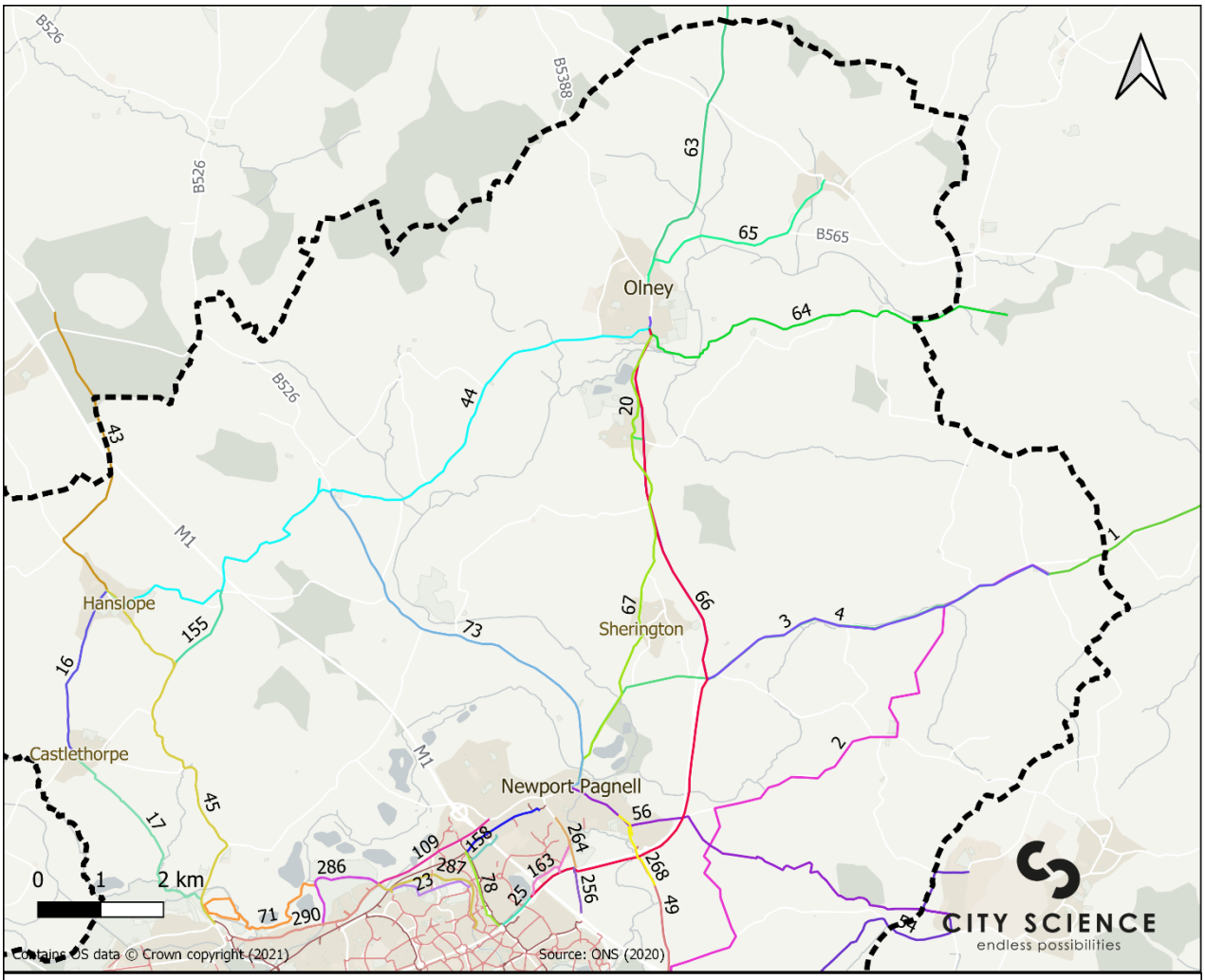


Figure 3-6: Interborough Schemes in the north of the borough (ML = Missing Link, RI = Redway Improvement, LS = Local Scheme)

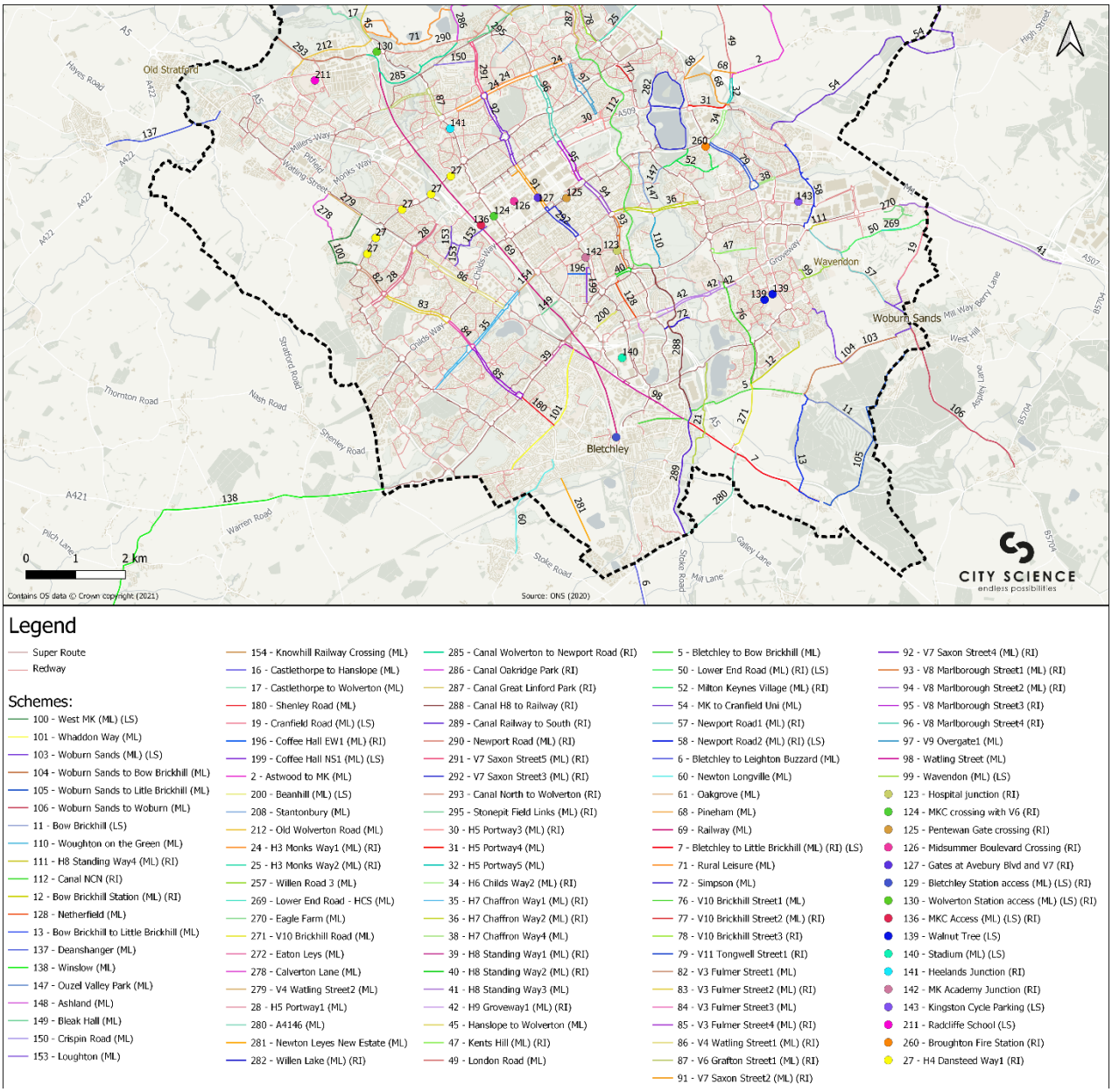


Figure 3-7: Interborough Schemes in the south of the borough (ML = Missing Link, RI = Redway Improvement, LS = Local Scheme)

4 Stage 4: Development of Local Network (Walking & Short-Distanced Cycling)

Chapter at a Glance

This chapter summarises a more localised development of a walking and short distanced cycling network, focussing on key destinations around the borough to create local network plans for each. These key destinations are Central Milton Keynes, Bletchley, Newport Pagnell, Olney, Wolverton and Stony Stratford. The local network plans are developed from Core Walking Zones (see Section 4.1.1) followed by data and gap analysis (see Sections 4.1.2 to 4.1.4). The local network for each destination are detailed in Section 4.2.

4.1 Methodology

4.1.1 Core Walking Zones

A Core Walking Zone (CWZ) consists of a number of walking trip generators that are located close together such as a town centre. As this LCWIP covers the whole borough of Milton Keynes there are potentially many key walking trip generators. As such, eight key centres were selected to have a CWZ developed, these are:

- Bletchley around Queensway
- Central Milton Keynes
- Milton Keynes Train Station
- Milton Keynes University Hospital
- Newport Pagnell
- Olney
- Stony Stratford
- Wolverton

Core Walking Zones are identified by generating a 5-minute walk (400m) buffer zone around each of the walking trip generators as recommended by the LCWIP guidance.

Once a CWZ is defined, key walking routes into the area are identified, these routes are then analysed to determine if an audit is required and if any schemes should be suggested along these routes. During the site visit (see Section 2.4), some of the key walking routes were visited, carrying out a brief audit and suggesting possible schemes to improve them. Figure 4-2 to Figure 4-6 show the CWZs for each of the above centres and the key walking routes identified into and around them.

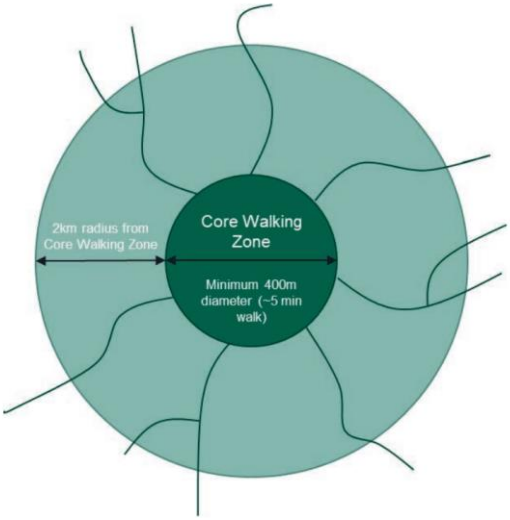


Figure 4-1: DfT Guidance for identifying a Core Walking Zone and key walking routes

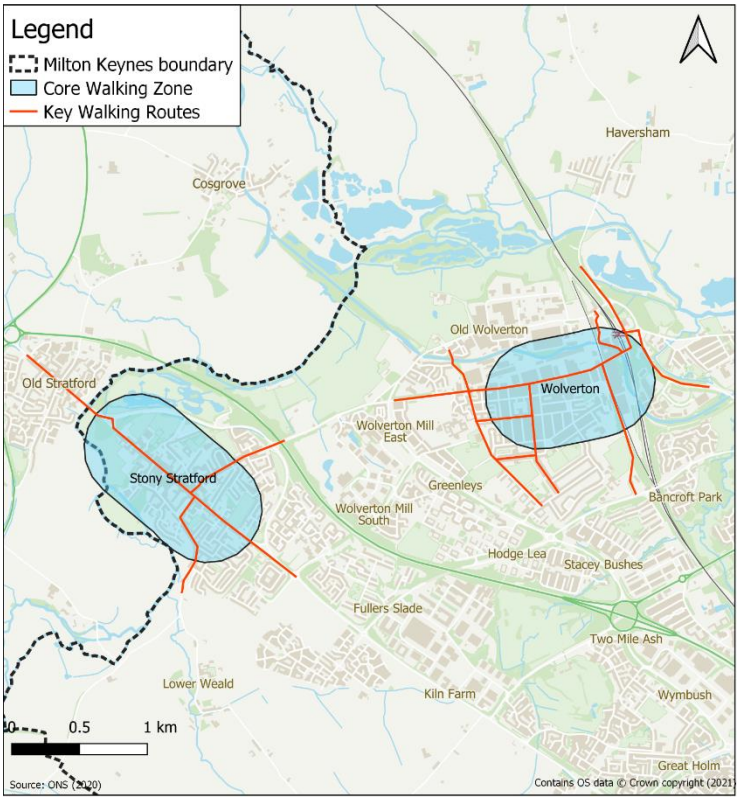


Figure 4-2: Core Walking Zones in Wolverton and Stony Stratford

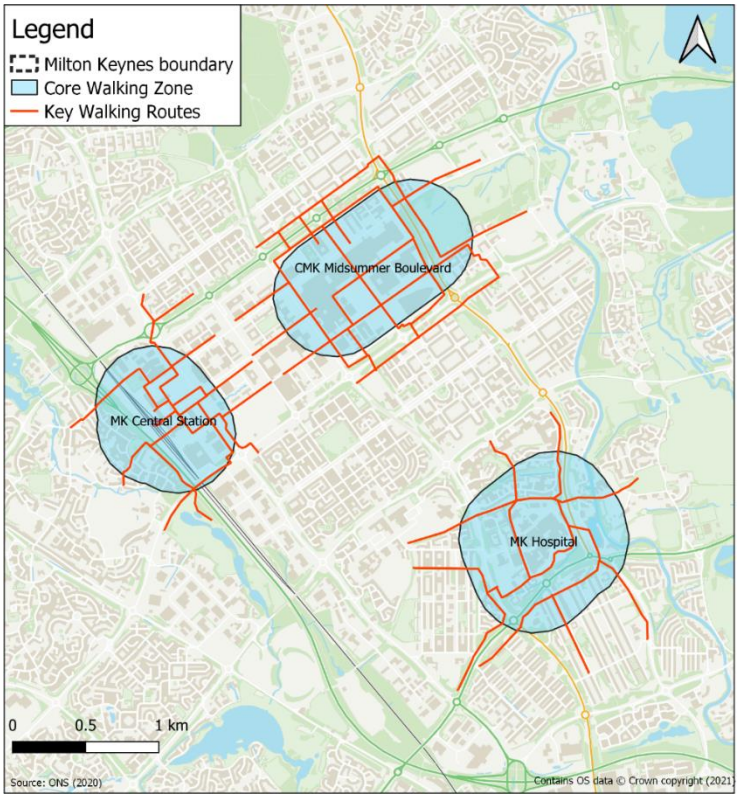


Figure 4-3: Core Walking Zones around Central Milton Keynes

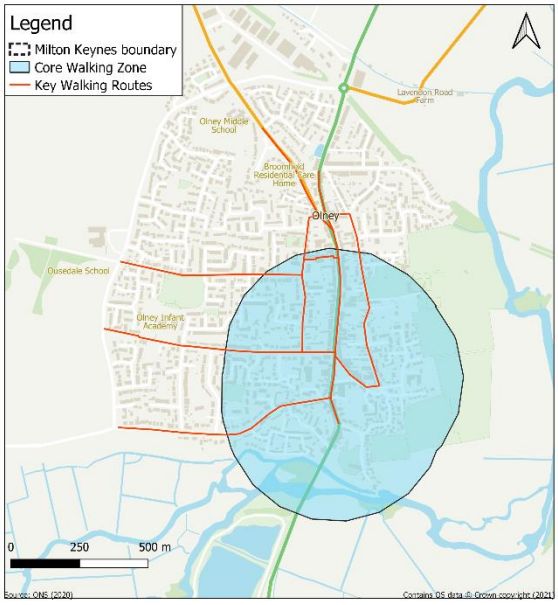


Figure 4-4: Core Walking Zone in Olney

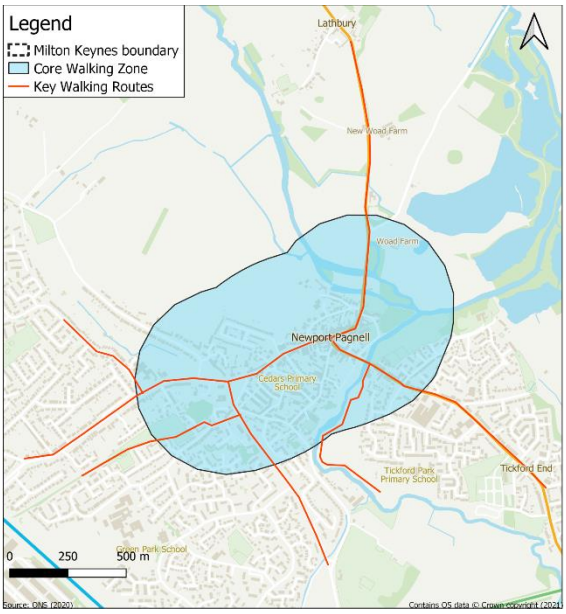


Figure 4-5: Core Walking Zone in Newport Pagnell

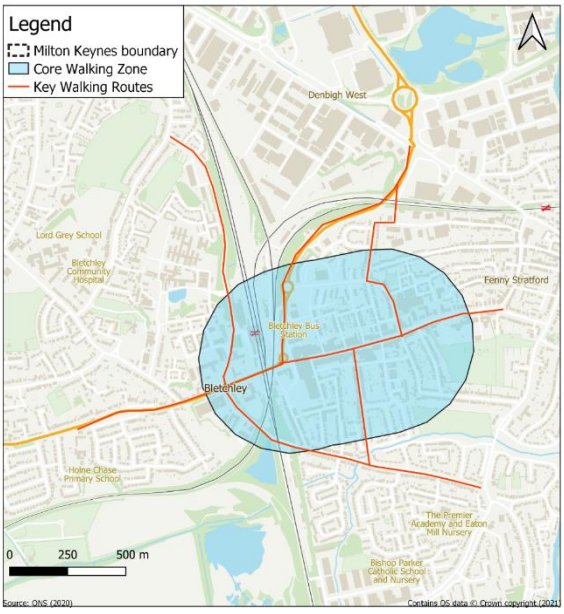


Figure 4-6: Core Walking Zone in Bletchley

4.1.2 Baseline Data Analysis

As in the previous network planning stage, evidence from the Evidence Base was used to paint a picture of the walking and cycling provision in each urban area.

Data which was particularly useful in this stage was the porosity (barrier), mesh (infrastructure) density data, collision and Strava data, as they are able to be split out to pedestrians, and walking isochrones. The walking isochrones were created for each CWZ to highlight gaps in the infrastructure, see Section 4.1.1.

These isochrones were then used for each CWZ to show accessibility into the urban centre. For example, the walking isochrone for Bletchley shows there is a lack of infrastructure to the north-west and south of the town, see Figure 4-6. The walking scope in this figure represents where the isochrone is expected to reach, the gap between this and the edge of the isochrone shows there is a lack of direct route, or infrastructure in general in that direction from the town centre. There are also gaps to the east but there is little to no general infrastructure there so improved access is not necessary.

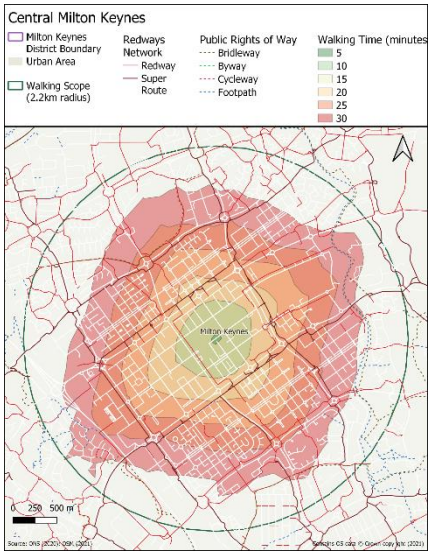


Figure 4-7: Walking Isochrone for Central Milton Keynes

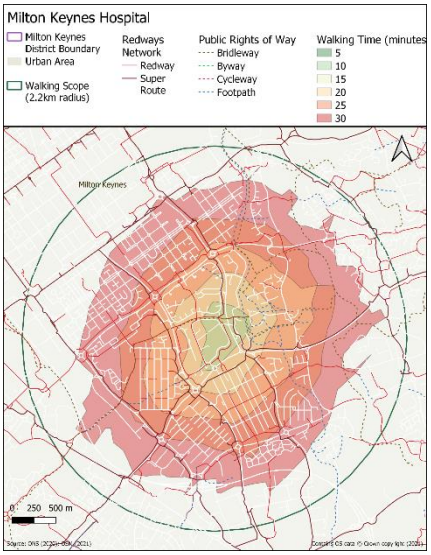


Figure 4-8: Walking Isochrone for Milton Keynes Hospital

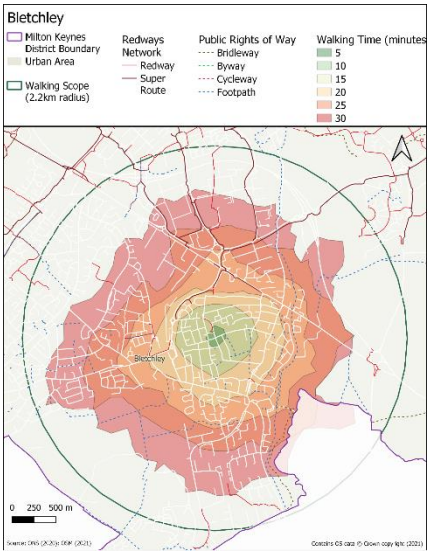


Figure 4-9: Walking Isochrone for Bletchley

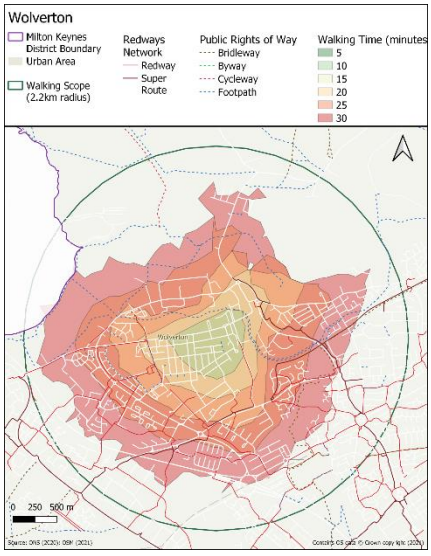


Figure 4-10: Walking Isochrone for Wolverton

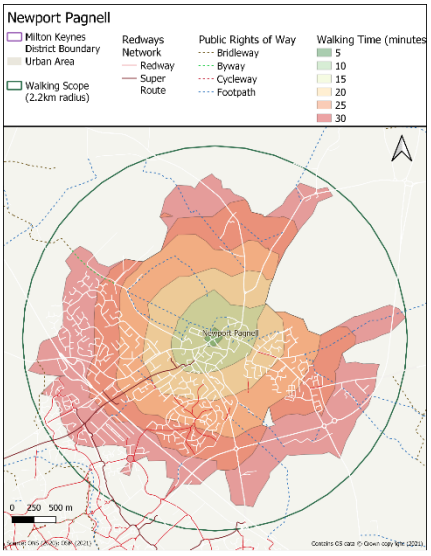


Figure 4-11: Walking Isochrone for Newport Pagnell

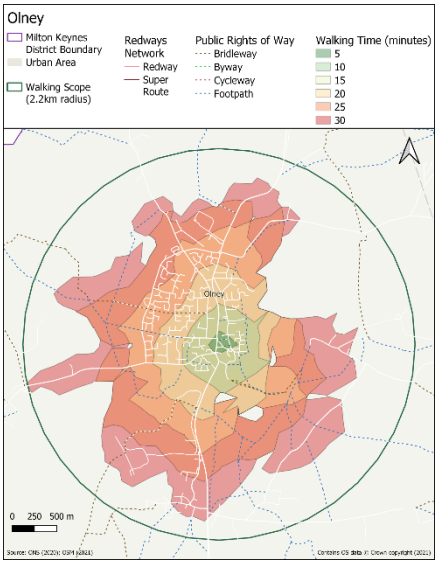


Figure 4-12: Walking Isochrone for Olney

4.1.3 Desire Lines

Having looked at the strategic desire lines (see Section 3.1.2), this step looks at the localised movements within urban centres. This included identifying key shopping, employment and transport areas and the connections between them. Significant movements that came out of this analysis include access to the main train stations (e.g. MK Central, Bletchley and Wolverton), access to employment hubs around Kingston and the main shopping districts in Central Milton Keynes and the retail park around MK Stadium.

4.1.4 Gap Analysis

Once the evidence was collated and desire lines identified, the existing network was analysed to highlight areas where the network is lacking. This was predominantly a desk-based exercise, comparing desire lines and high demand routes (from e-scooter data and the Propensity to Cycle Tool) to the existing infrastructure.

4.1.5 Existing Network Analysis

Further to identifying missing links, analysis was also carried out on the existing network using the Vaisala Pavement data (see Appendix A – Evidence Base Report) and knowledge gained from the site visit. This identified areas of Redway in need of improvement including widening, signage, lighting and improvement of safety at road crossings.

4.2 Local Networks

The following sections detail the local networks (excluding interborough schemes, see Section 3.2) developed during this stage for Central Milton Keynes (see Figure 4-13), Bletchley (see Figure 4-14), Newport Pagnell (see Figure 4-15), Wolverton & Stony Stratford (see Figure 4-16 and Figure 4-17) and Olney (see Figure 4-18), with Missing Links (ML), Redway Improvements (RI) and Local Schemes (LS).

4.2.1 Central Milton Keynes

A large number of schemes were identified within Central Milton Keynes, see Figure 4-13.

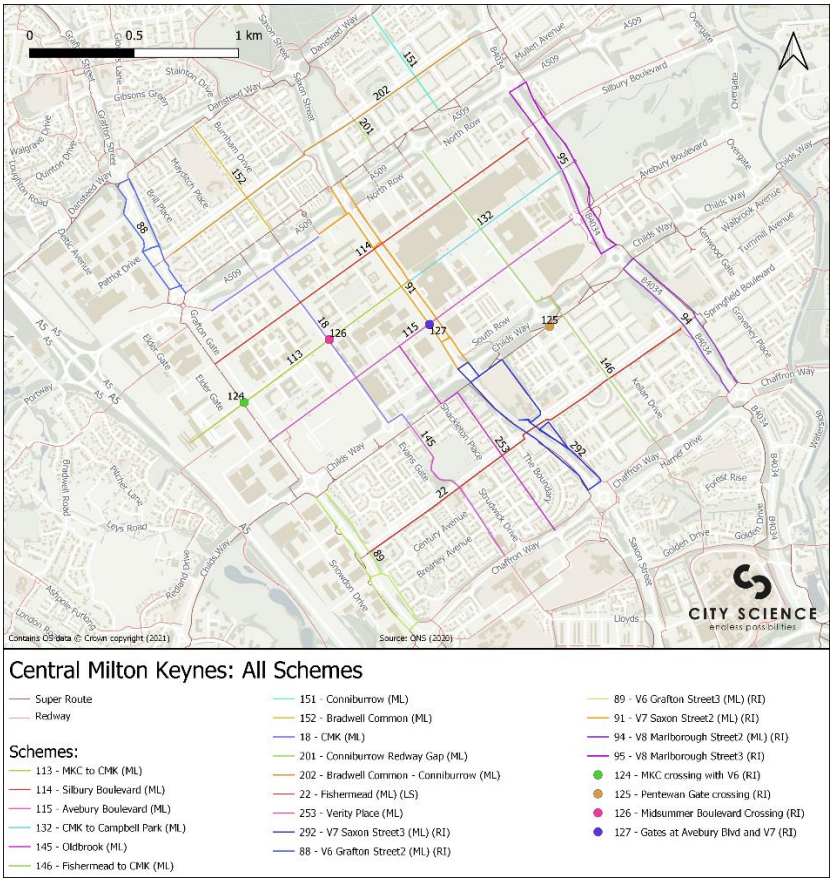


Figure 4-13: Local Network over Central Milton Keynes

These include the missing link identified by stakeholders and the site visit between the train station and central shopping district (Scheme 113). Other schemes identified include the crossing of the adjoining suburbs of Oldbrook, Fishermead, Bradwell Common & Conniburrow (e.g. Schemes 151, 152, 202).

Alongside missing links, some junction improvements were identified as schemes. One such example is the crossing of the Redway with Pentewan Gate (Scheme 125) which raised safety concerns on the site visit as one of the few at-grade junctions along that stretch of Redway and has limited visibility onto the adjoining grid road.

4.2.2 Bletchley

Bletchley has the highest number of proposed schemes out of all the focus areas in this LCWIP. This is due to the lack of existing provision and potential for active travel uptake in the area as well as potential to deliver improvements for walking and cycling through the East West Rail project.

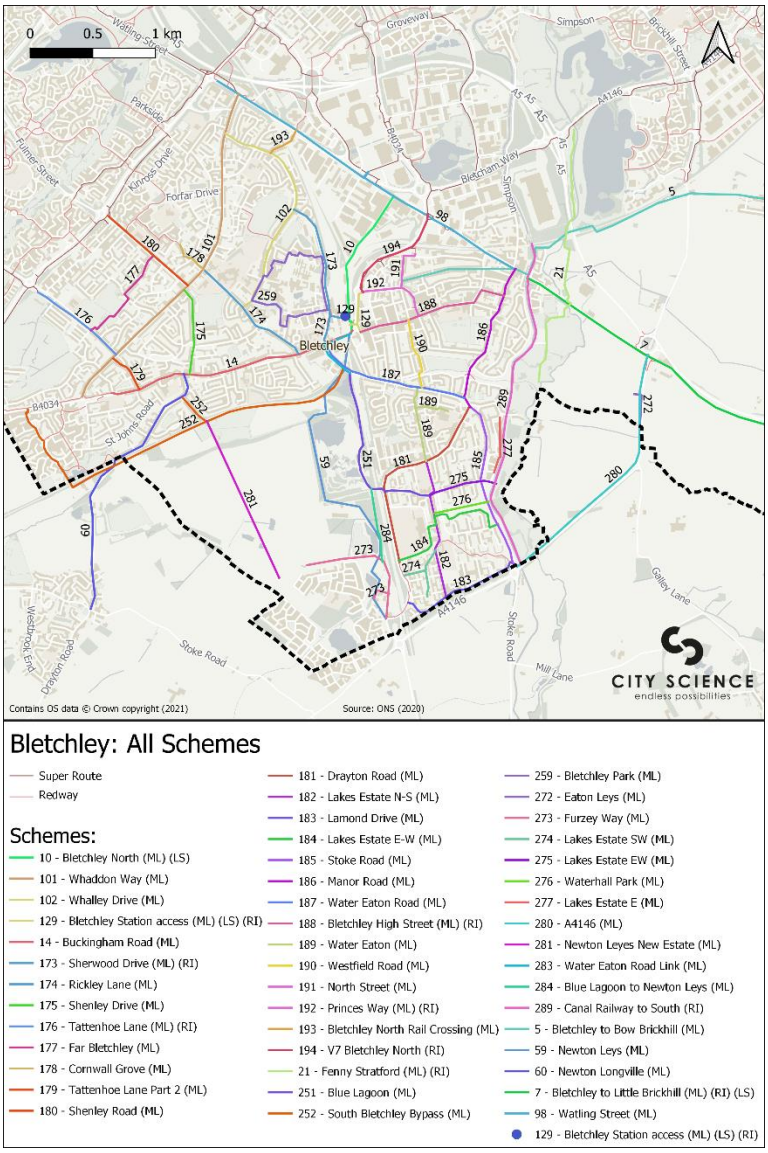


Figure 4-14: Local Network over Bletchley

The schemes identified are predominantly missing links, see Figure 4-14. Notable schemes include the missing links along Buckingham Road (Scheme 14), Saxon Street (Scheme 129) & Queensway (Scheme 188).

These schemes also include committed schemes to connect Newton Leys to Central Bletchley which are already in development (Schemes 251, 187, 283 & 284).

Missing links were identified through the south-east of the town around Lakes Estate and Water Eaton, with the aim to connect these areas with Central Bletchley. Another notable scheme is the proposed Bletchley Southern Bypass (Scheme 252) which aims to provide a quieter east-west route to the south of the town along the railway line.

4.2.3 Newport Pagnell

Although there is already some good infrastructure in Newport Pagnell, the majority of proposed schemes in Newport Pagnell are missing links due to the lack of existing Redways in the area.

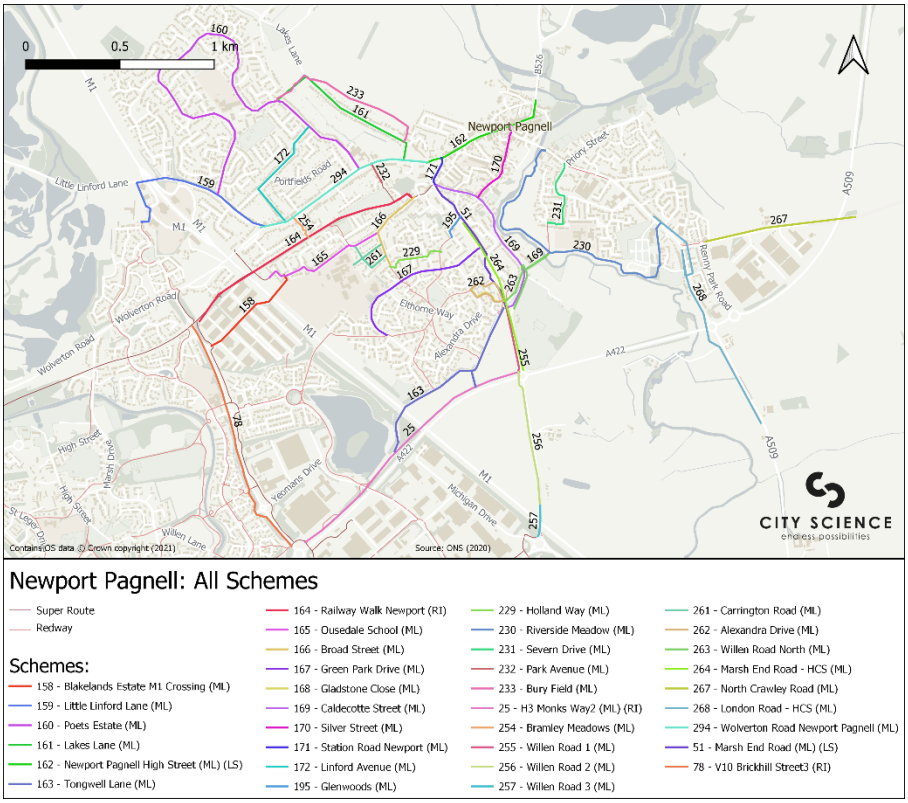


Figure 4-15: Local Network over Newport Pagnell

Schemes in this local network are focussed on joining up the existing sections of Redway in the town and providing access across the different neighbourhoods, see Figure 4-15.

Other schemes include improvements to the high street to make more accessible to walking and cycling (Scheme 162) and improving access to Ousedale School (Scheme 261). Some schemes were also proposed to support upcoming future development to the east and south of the town (Schemes 267 and 255 respectively).

4.2.4 Wolverton

A large number of schemes were proposed by stakeholders in Wolverton, with the aim of creating a network of quiet routes through the old, terraced streets south of the high street. The most viable of these have been included in the proposed local network for Wolverton (see Figure 4-16) and include Church Street and some garage access roads which run behind houses as there is limited space on the roads for Redways to be retrofitted.

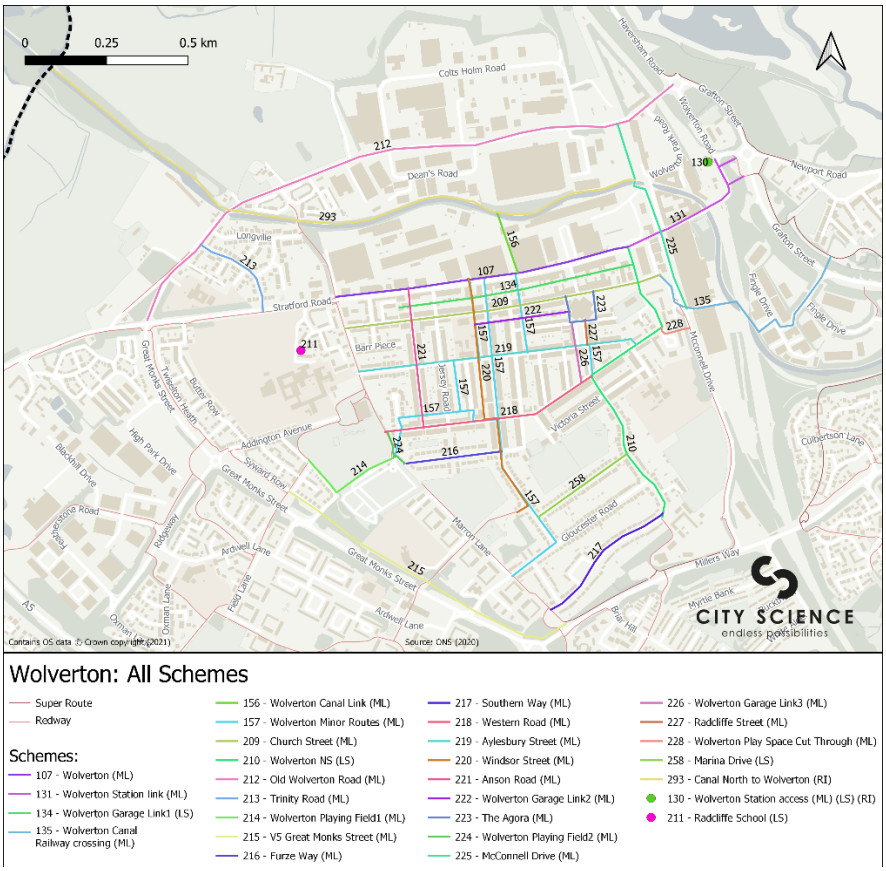


Figure 4-16: Local Network over Wolverton

A scheme has been proposed around the Radcliffe School to improve access for students (Scheme 211). Schemes have also been proposed around Wolverton Station to improve access by active modes. Scheme 131 links the existing Redway to the east of the town to the station and beyond into Wolverton.

A key issue in Wolverton is the lack of crossing points over/under barriers such as the railway line, railway works and the canal. Schemes have been proposed to increase the number of crossings, including Scheme 156 across the railway works and Scheme 135 across the railway line and canal.

4.2.5 Stony Stratford

Three schemes have been proposed in Stony Stratford (see Figure 4-17), including access to Old Stratford (Scheme 144) and a link around Queen Eleanor Street to provide a quiet route around the town and improve access to St Mary and St Giles C of E School (Scheme 75).

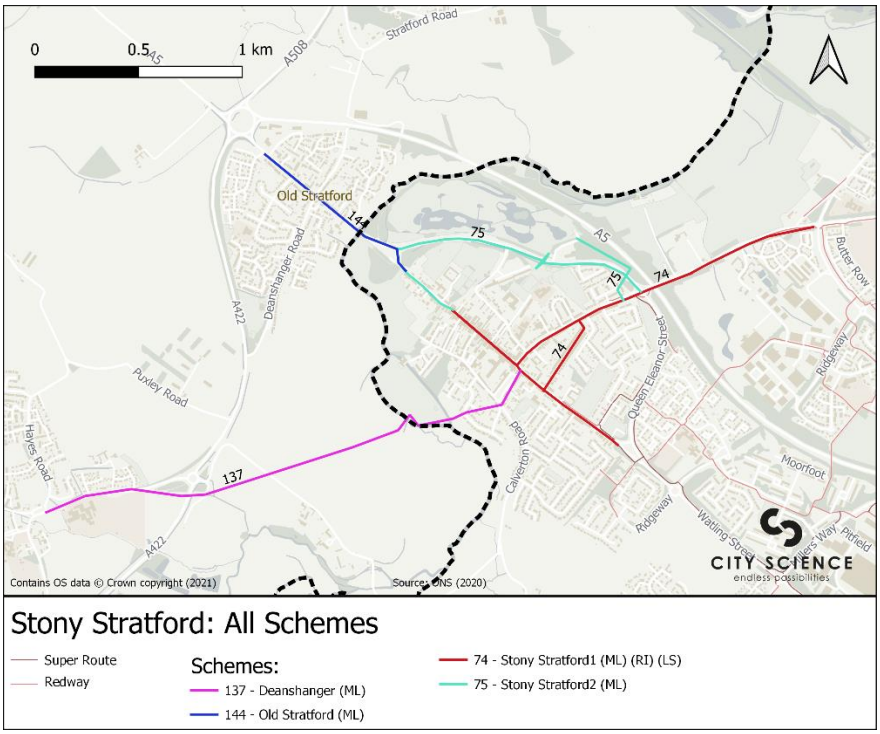


Figure 4-17: Local Network over Stony Stratford

The most significant scheme in Stony Stratford is linking the Redway to the east and south which stop just before the town along London Road and Wolverton Road (Scheme 74). Ideally this scheme would carry along these two roads to provide access to the high street also, however a secondary option for a route has been proposed along Clarence Road to provide a quieter option for through journeys.

4.2.6 Olney

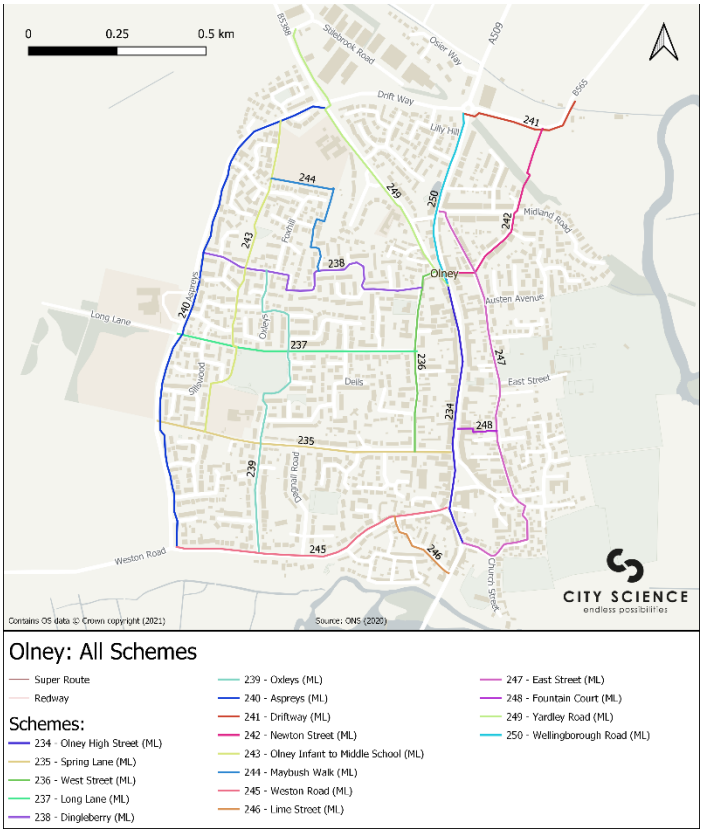


Figure 4-18: Local Network over Olney

There is already a good network of paths through the residential estates of Olney so the majority of the schemes proposed would be upgrading these paths to Redways. Schemes proposed in Olney (see Figure 4-18) focus around the residential areas to the west of the town, predominantly providing links between the infant, middle and secondary schools (e.g. Schemes 243, 240 & 237).

Other schemes include improving access along the high street (Scheme 234) and the roads heading out of the town to the north, east and south (Schemes 249, 245 & 246 respectively).

4.3 Low Traffic Neighbourhoods

The nature of the road network in Milton Keynes, is compatible with Low Traffic Neighbourhoods, which by installing 'modal filters' aim to reduce motorised traffic on residential streets, thereby improving safety, reducing noise and air pollution and making these streets more pleasant places to live. A 'modal filter' is a temporary or permanent barrier that prevents certain vehicles from passing down a street. For example, a planter can prevent motorised vehicles from passing but allow pedestrians and cyclists through, or a camera operated bollard can bar through-traffic but allow residents full access.

As part of the LCWIP, example locations to consider for Low Traffic Neighbourhoods were identified and are aligned with the findings of the Government's Gear Change: one-year-on review and the benefits of these schemes seen across the UK. Example locations to consider for Low Traffic Neighbourhoods are shown below for Bletchley, Wolverton and Olney (see Figure 4-19 to Figure 4-21). Local engagement is recommended to investigate these proposals and identify additional locations in other local communities.

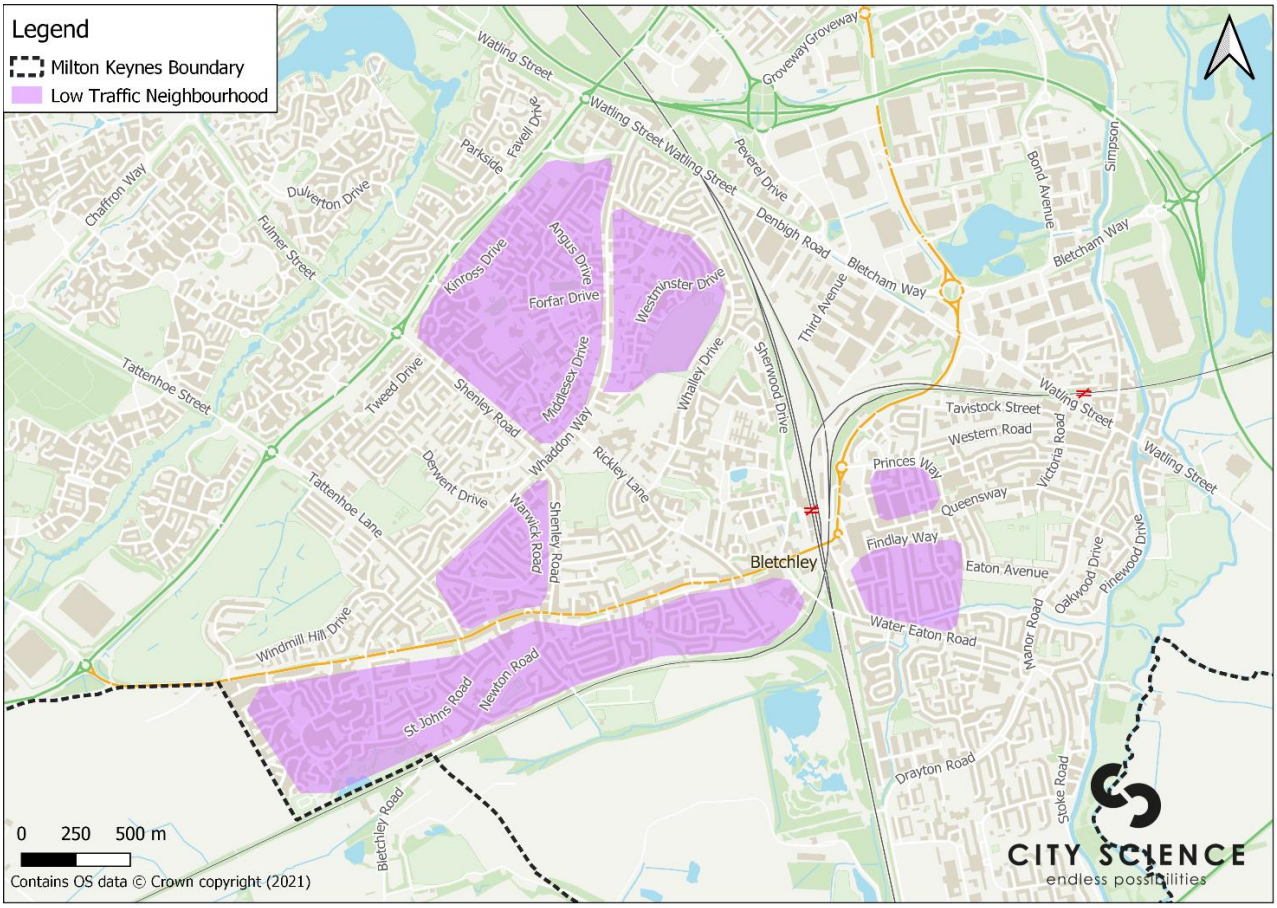


Figure 4-19: Example Low Traffic Neighbourhoods in Bletchley

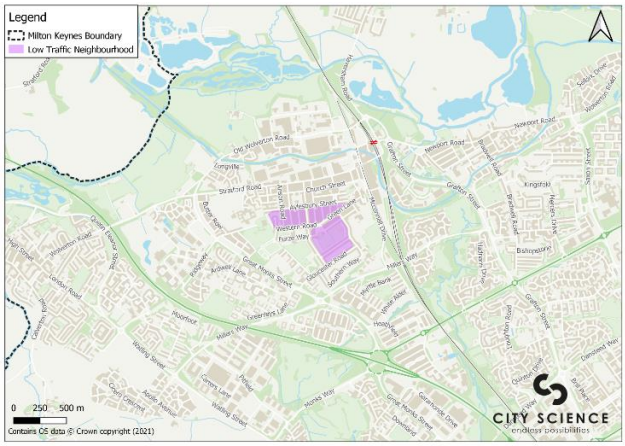


Figure 4-20: Example Low Traffic Neighbourhoods in Wolverton

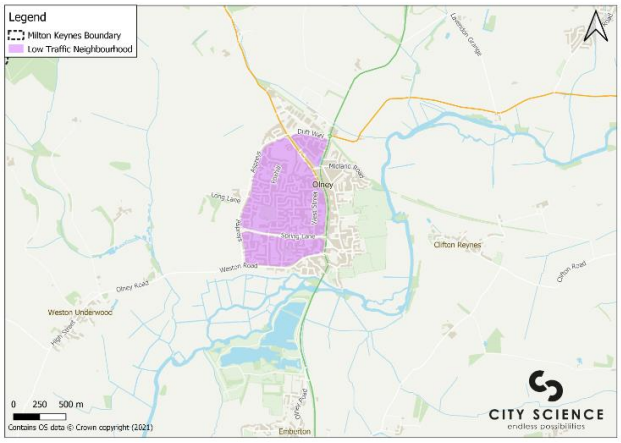


Figure 4-21: Example Low Traffic Neighbourhoods in Olney

5 Prioritising Infrastructure Improvements (Appraisal Framework)

Chapter at a Glance

This chapter summarises the appraisal of schemes identified in the network planning stages (see Chapters 3 and 4), including their collation to form a long-list of schemes (see Section 5.1) and ranking using an appraisal framework developed in consultation with the Council and key external stakeholders (see Section 5.3). The results of this appraisal then went on to form the prioritised list of schemes. The full list of schemes with their appraisal score and ranking is shown in the Scheme Appraisal Technical Note (see Appendix C – Full List of LCWIP Schemes (Table)).

5.1 The Long-List

After carrying out the above network planning stages, the results of each stage were combined to produce a long-list of 275 schemes setting out an ambitious network of schemes to improve the walking and cycling infrastructure within the borough (see Figure 5-1: Long-list schemes over the borough).

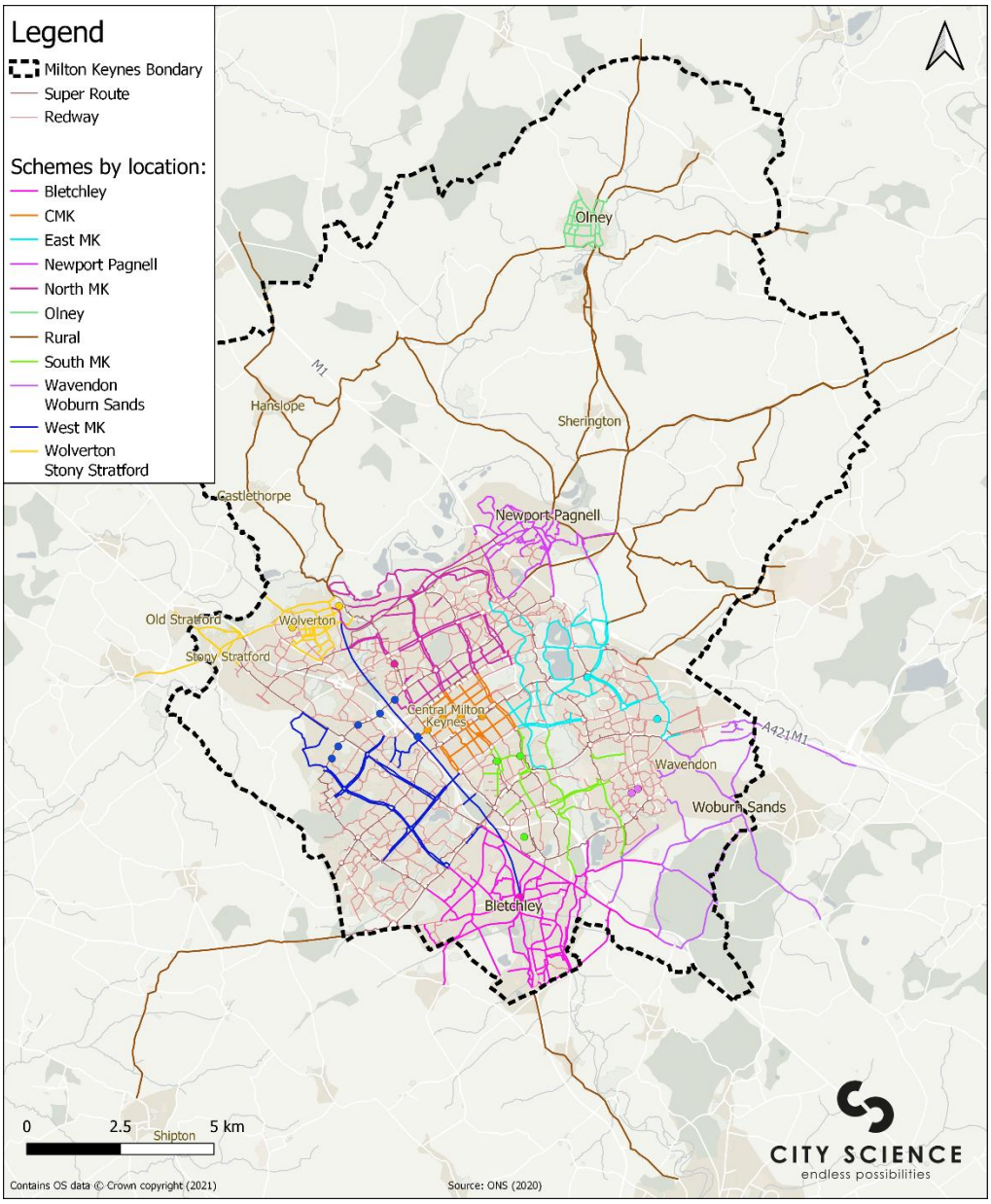


Figure 5-1: Long-list schemes over the borough

Figure 5-2: Breakdown of Long-List Schemes by Location

The schemes were categorised as:

- **Missing links:** a new section of infrastructure (e.g. a Redway) which bridges a gap in the network
- **Redway Improvements:** Improvements to an existing Redway (e.g. widening, segregation, crossing improvements)
- **Local Schemes:** Non-Redway based interventions (e.g. Low Traffic Neighbourhoods and cycle parking)

Due to the corridor approach that was taken when developing the schemes, it is possible for schemes to have multiple classifications. For example, if a corridor is identified between A and B and already has some low quality Redway along it but more infrastructure is needed to link it into the wider network, this scheme would be classed as both a Missing Link and Redway Improvement.

A breakdown of the classification of schemes is shown in Figure 5-3.

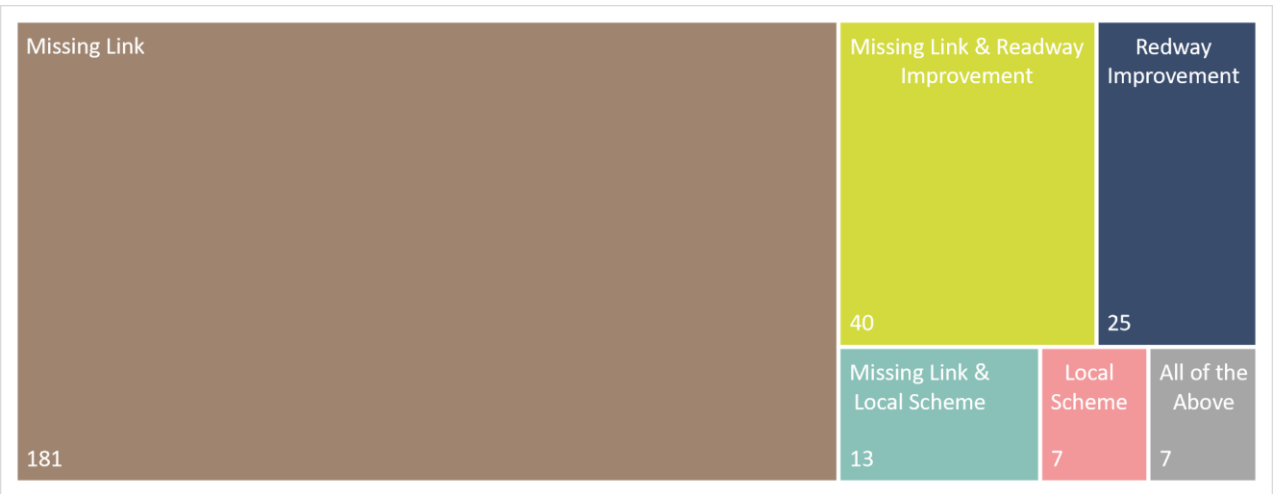


Figure 5-3: Breakdown of Long-List Schemes by Type

5.2 Framework Development

The appraisal framework was developed in consultation with Milton Keynes Council and key external stakeholders. The appraisal assessed the schemes in the long-list developed in the Network Planning stages.

5.3 Appraisal Metrics

Category	Metric	Weight	Scoring		
			Low	Medium	High
Socio-Economic	Deprivation Index	6%	Scheme in area of low deprivation, index between 8th-10th decile	Scheme in area of medium deprivation, index between 5th-7th decile	Scheme in area of high deprivation, index between 1st-4th decile
	Physical Activity Levels	6%	Area of low physical inactivity (< 20%)	Area of medium physical inactivity (between 20-30%)	Area of high physical inactivity (>30%)
	Access to Education	6%	Scheme further than 5-minute walk from educational facility	Scheme within 5-minute walk from educational facility	Scheme within 100m of an educational facility
	Access to Health Services	4%	Scheme further than 10-minute walk from health care facility	Scheme within 10-minute walk from health care facility	Scheme within 5-minute walk from health care facility
	Access to Employment	6%	Scheme further than 5-minute walk from employment zone	Scheme within 5-minute walk from employment zone	Scheme within 100m of an employment zone
Infrastructure Standards	Standard of Infrastructure Compared to Guidance	6%	Potential scheme not wide enough for 3-5m or able to provide segregation from road	Some of the proposed route has space for 3-5m and/or segregation from the road	Majority of the proposed route has space for 3-5m and/or segregation from the road
	Density of Surrounding Infrastructure	8%	High density of surrounding infrastructure	Some surrounding infrastructure but lower density	Low density / no surrounding infrastructure
	Expansion of Existing Network	6%	Scheme does not connect to existing Redway Network	Scheme within 400m of existing Redway Network	Scheme directly connects to existing Redway Network
Policy	Strategic Cycle Route	6%	Does not connect to a Strategic Cycle Route	Joins to a Strategic Cycle Route	Lies along a Strategic Cycle Route
	Supporting of Future Development	8%	No future development within 400m of scheme	Future development within 400m of scheme	Future development within 100m of scheme
Effectiveness	Potential Population Benefitting from Scheme	8%	Estimated population of less than 1,500 within 5-minute walk from scheme	Estimated population of between 1,500-2,500 within 5-minute walk from scheme	Estimated population of more than 2,500 within 5-minute walk from scheme
	Potential Improvement to Road Safety	6%	Less than 4 collisions per km within 400m of scheme	Between 4 and 10 collisions per km within 400m of scheme	More than 10 collision per km within 400m of scheme
	Current Active Travel Demand	6%	On a PCT route with low demand (< 15) **AND** not on an e-scooter route	On a PCT route with medium demand (15-30) **OR** on an e-scooter route with below average demand	On a PCT route with high demand (> 30) **OR** on an e-scooter route with above average demand
	Access to Public Transport Hubs	8%	No Public Transport Hubs within 800m of scheme	Public Transport Hub within 800m of scheme	Public Transport Hub within 400m of scheme
	Access to Bus Stops	4%	No bus stops in scheme area **OR** bus stops in scheme area all have frequency < 1 bus per hour	Bus stops within scheme area have a max frequency between 1-3 bus per hour	Bus stops within scheme area have max frequency > 3 bus per hour
Dependency	Dependency on Other Schemes	6%	Little to no benefit from scheme unless	Maximum benefit delivered if connected to other schemes	No dependency on other schemes

Table 5-1: Milton Keynes LCWIP Scheme Appraisal Framework

5.4 Appraised Long-List Summary

The majority of top scoring schemes were located within either Milton Keynes Town or Bletchley, with the top 10 performing schemes for each are detailed in Sections 5.4.1 and 5.4.2 respectively.

Details of the top scoring schemes in the wider borough are also provided in Section 5.4.3 to highlight well performing schemes outside of these two urban centres. A full, ordered long-list is provided in Appendix C – Full List of LCWIP Schemes (Table) which details the scheme name, scheme location, weighted scores for each of the appraisal metrics and their total combined score. Following this appraisal, Schemes 42, 113, 115, 125 and 146 were highlighted to be taken forward for further feasibility by this study (see Section 6.3.2), whilst the Saxon Street schemes would be progressed internally by the Milton Keynes Council Highways Team.

5.4.1 Milton Keynes Town

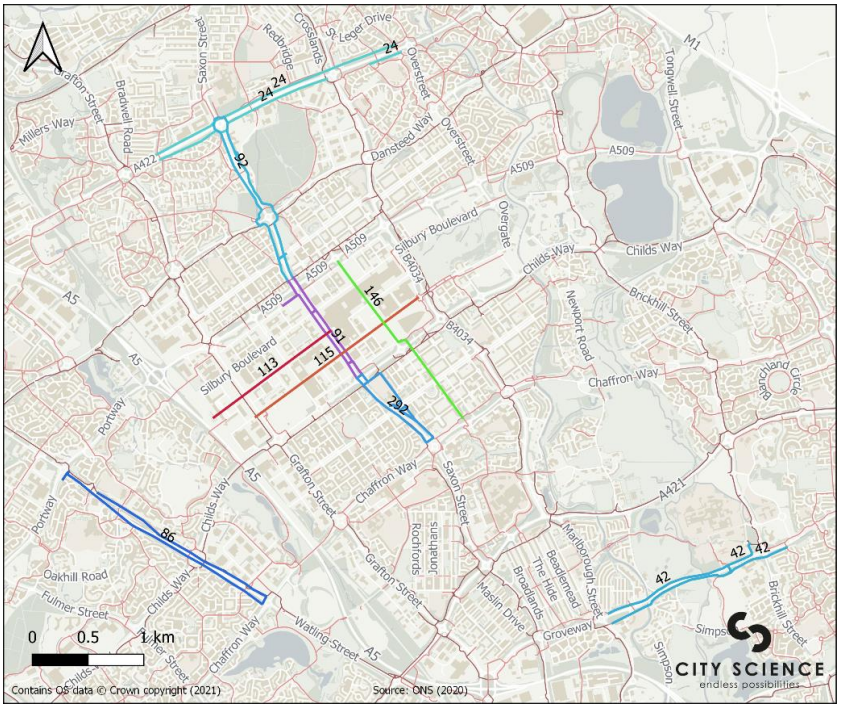


Figure 5-4: Top 10 Schemes in Milton Keynes Town

Score	Scheme	Description
83% 5th	Avebury Boulevard (Scheme 115)	Provision of enhancing the route through Central Milton Keynes along Avebury Boulevard, which currently traverses car parks. **(Gap Analysis, Site Visit)**
81% 7th	V7 Saxon Street (Oldbrook) (Scheme 292)	Improvements to the Redway along Saxon Street between Oldbrook and Fishermead including joining up existing elements sections and providing more direct routes. **(Gap analysis, Route Selection Tool)**
80% 13th	H9 Groveway (Ouzel Valley Park) (Scheme 42)	Route along H9 Groveway near Ouzel Valley Park to join up existing stretches of Redway along the busy trunk road. **(Gap analysis, Route Selection Tool)**
77% 20th	V7 Saxon Street (CMK) (Scheme 91)	Providing a secondary route along V7 Saxon Street through Central Milton Keynes to allow for a route on both sides of the busy road. **(Gap analysis, Route Selection Tool)**
77% 21st	Fishermead to CMK (Scheme 146)	Providing a new route connecting Fishermead to Central Milton Keynes. **(Gap Analysis)**
76% 22nd	V7 Saxon Street (Conniburrow) (Scheme 92)	New route along V7 Saxon Street between H4 and H5 as well as providing improvements between H4 and H3 including more directness around connecting Redway junctions. **(Stakeholder Engagement)**
75% 26th	V4 Watling Street (Loughton) (Scheme 86)	This scheme connects up sections of Redway along V4 Watling Street near Loughton. **(Gap analysis, Route Selection Tool, Stakeholder Engagement)**
75% 27th	Milton Keynes Central Station to CMK (Scheme 113)	Scheme links the railway station to Central Milton Keynes. **(Gap analysis; Site Visit; Stakeholder Engagement - Green Party)**
74% 28th	Pentewan Gate Crossing (Scheme 125)	Improving an unsafe, high volume road crossing of the Redway at Pentewan Gate which lies off H6 Childs Way. **(Site Visit)**
74% 29th	H3 Monks Way (Stantonbury) (Scheme 24)	Joining up sections of Redway along H3 Monks Way near Stantonbury and provide more directness along the route around junctions with other Redways. **(Gap Analysis, Route Selection Tool)**

Table 5-2: Top 10 performing schemes in Milton Keynes Town

5.4.2 Bletchley

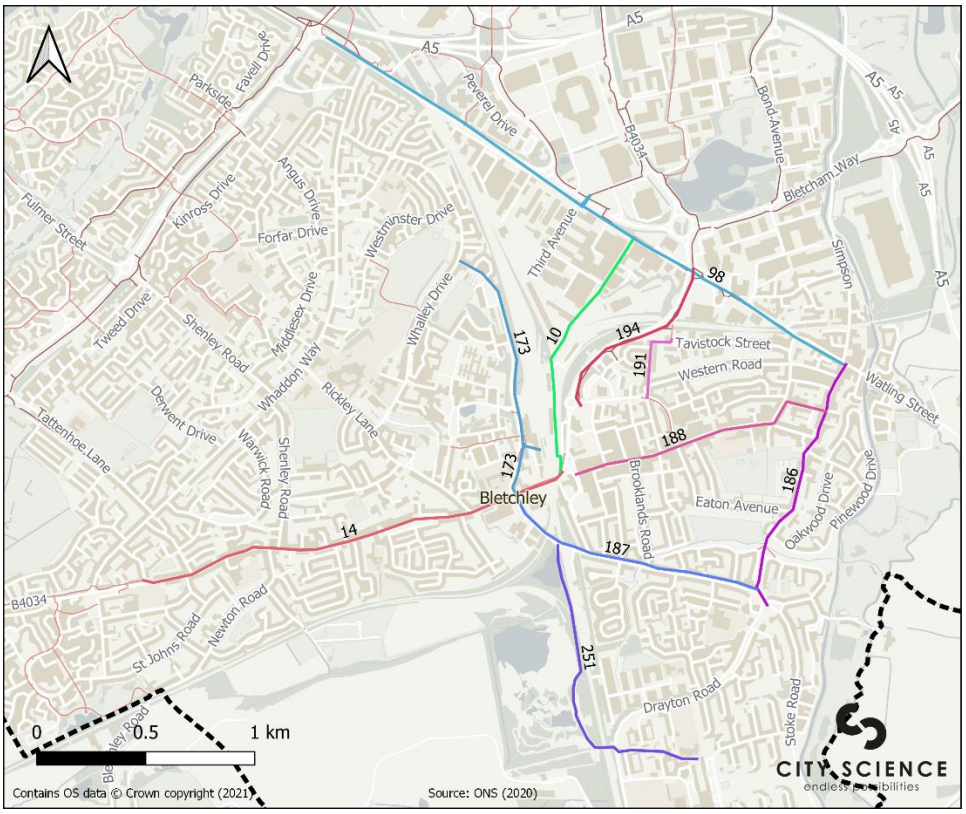


Figure 5-5: Top 10 Schemes in Bletchley

Score	Scheme	Description
89% 1st	V7 Bletchley North (Scheme 194)	This scheme is to improve and extend the Redway along V7 Saxon Street into Bletchley from the north. **(Gap Analysis, Stakeholder Engagement, Site Visit)**
88% 2nd	Manor Road (Scheme 186)	This scheme connects Water Eaton to Fenny Stratford. It was developed through gap analysis and analysing the demand over that area. **(Stakeholder Engagement - Local Parish Council)**
84% 3rd	Sherwood Drive (Scheme 173)	New route along Sherwood Drive, providing a link from the north via Bletchley Station and Bletchley Park. **(Gap Analysis, Stakeholder Engagement - Local Parish Council & the Green Party)**
83% 4th	Queensway (Scheme 188)	This scheme along Queensway connects Saxon Street to Fenny Stratford. This is a high demand area and subject to other studies looking into the pedestrianisation of part of this scheme's route. It is backed by multiple evidence sources as an area of high demand and consultation responses from multiple suggesters. **(Stakeholder Engagement)**
83% 6th	Blue Lagoon (Scheme 251)	This scheme is part of the Highways Committed Schemes to support current and future developments. It forms part of the route to link Newton Leys to Central Bletchley. **(Stakeholder Engagement - Local Parish Council)**
81% 8th	Water Eaton Road (Scheme 187)	This scheme is part of the Highways Committed Schemes to support current and future developments. It connects Water Eaton to Central Bletchley and is also supported by a consultation response from a local parish council. **(Stakeholder Engagement - Local Parish Council)**
81% 9th	North Street (Scheme 191)	A new route connecting the end of the current Redway network along Denbigh Way to Princes Way. **(Stakeholder Engagement - Local Parish Council)**
81% 10th	Watling Street (Scheme 98)	This scheme links up sections of Redway along Watling Street to the north of Bletchley. **(Stakeholder Engagement - Bletchley Town Plan)**
80% 11th	Bletchley North (Scheme 10)	This scheme looks to provide a new link from the station/Saxon Street area through the industrial estate to Watling Street. This was derived from consultation responses and supported by the evidence base that the movement between Saxon Street and Watling Street is desirable. **(Gap Analysis, Stakeholder Engagement)**
80% 12th	Buckingham Road (Scheme 14)	On one of the main roads through Bletchley this scheme seeks to provide and east-west link to the south of the town. **(Gap Analysis, Stakeholder Engagement - Local Parish Council & the Green Party)**

Table 5-3: Top 10 performing schemes in Bletchley

5.4.3 Wider Milton Keynes Borough

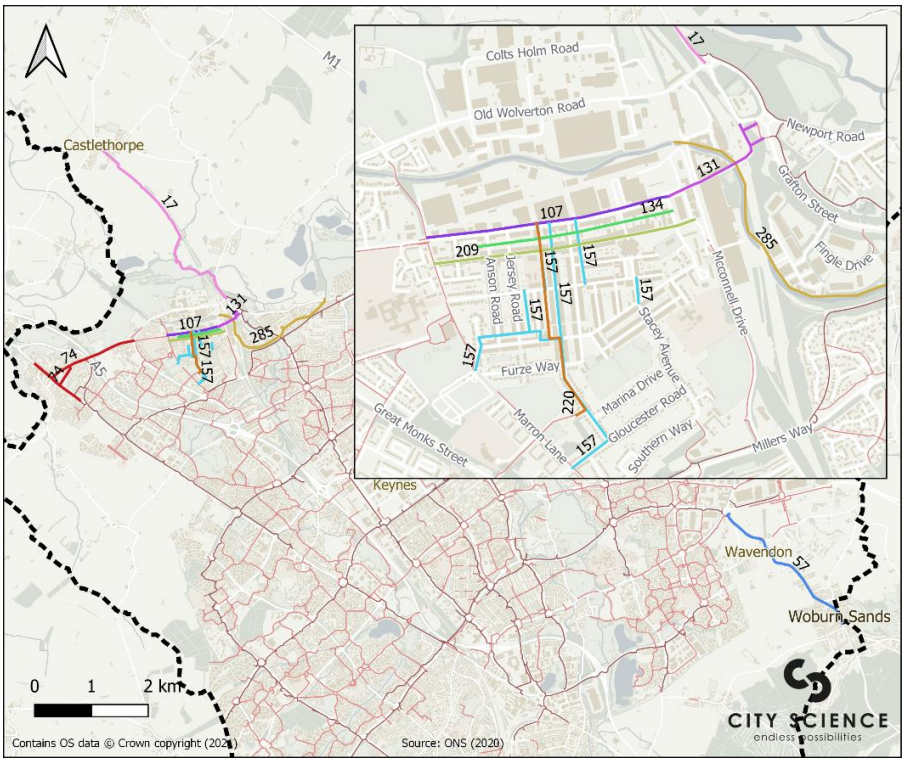


Figure 5-6: Top 10 Schemes in Wider Milton Keynes Borough

Score	Scheme	Description
78% 17th	Wolverton High Street (Scheme 107)	Providing a link along the main road through Wolverton, although due to widths it would be difficult to deliver provision on this corridor. **(Gap Analysis, Stakeholder Engagement - Green Party)**
75% 25th	Stony Stratford (Scheme 74)	Providing a new route through Stony Stratford to link it to the wider Redway network and provide access to the high street. **(Gap Analysis, Stakeholder Engagement, Site Visit).**
73% 31st	Wolverton Station Link (Scheme 131)	Providing a link from the Redway to Wolverton across the canal and railway lines, including access to Wolverton Station. This would likely detour the Redway to come into the station from the south, under the railway arches, then provide a Redway along Stratford Street to Wolverton Centre **(Gap Analysis, Stakeholder Engagement, Site Visit)**
73% 34th	Church Street, Wolverton (Scheme 209)	Providing an east-west link along Church Street, which has been identified as an area of regeneration for the future. The scheme is backed by evidence and supported by consultation responses from the Parish Council and others. Some of the concerns raised on this stretch of road is the safety around maintenance and parked cars along the route. **(Gap Analysis, Stakeholder Engagement, Site Visit)**
72% 41st	Windsor Street, Wolverton (Scheme 220)	Providing a north-south link along Windsor Street connecting the main road through Wolverton to the Redway network to the south of the town. **(Gap Analysis, Stakeholder Engagement - Parish Council)**
71% 44th	Wolverton Garage Link (Scheme 134)	This scheme was identified as an alternative east-west link (to Stratford Street or Church Street) within the town. It would transform the existing wide alleyway between the blocks into a new Redway **(Gap Analysis, Stakeholder Engagement - Parish Council)**
71% 45th	Castlethorpe to Wolverton (Scheme 17)	Providing a link between Wolverton and Castlethorpe along the existing path on National Cycling Route 6, upgrading its standard to Redway levels. This would require upgrading the standard of this. **(Gap Analysis, Stakeholder Engagement - Parish Council)**
71% 47th	Newport Road, Woburn Sands (Scheme 57)	Providing an improved link from Woburn Sands to the wider Redway and improving the safety and provision of the existing sections of Redway along the route (which have received safety concerns and criticism). **(Gap Analysis, Stakeholder Engagement - Parish Council)**
70% 51st	Wolverton Minor Routes (Scheme 157)	Providing minor routes through Wolverton with increase active travel provision. These routes are narrow so the scheme may consist of multiple types of interventions from new Redways to low traffic neighbourhoods. **(Gap Analysis, Stakeholder Engagement - Parish Council)**
70% 53rd	Canal Wolverton to Newport Road (Scheme 285)	The Transport Infrastructure Development Plan (TIDP) proposes improving the canal through Milton Keynes. This study split the long route into multiple sections, with this section between Wolverton and Newport Road scoring highly. **(TIDP)**

Table 5-4: Top 10 performing schemes in the Wider Milton Keynes Borough

6 LCWIP Stage 6: Integration & Application

Chapter at a Glance

This chapter summarises alignment with local (see Section 6.1) and national (see Section 6.2) policy and then details the other, supporting recommendations for improving the Redways and ultimately increasing active travel mode share in line with the council's targets. This includes design guidance, improved signage & wayfinding, a maintenance plan and addressing of the role of Redway Super Routes in order to maximise the benefits achieved by the cost.

6.1 Integration with Local Policy

The creation of an LCWIP has been anticipated in much of what is currently adopted policy.

- Mobility Strategy (LTP4): Road Safety, Walking & Cycling and Smarter Travel Strategy anticipated the LCWIP as a way to create a list of options and prioritise them. Particular focus of LTP4 is safety. This LCWIP looked at rights of way, underpasses, segregation, speed differential between modes
- The Transport Infrastructure Development Plan sites the forthcoming LCWIP as a policy enabler for active travel
- This LCWIP builds on the evidence base summarised in the Milton Keynes Cycling and Walking Technical Report, providing supplementary data, analysis and planning. It is recommended that the two documents be considered as part of an overall whole evidence base to support the continuation of the LCWIP process. Inclusivity is big focus of the Cycling and Walking Technical Report which has formed a large part of this LCWIP's approach. Not only looking at improving the experience of current walkers and cyclists but looking at the barriers that prevent others from adopting this as their default mode of transport
- The conclusions drawn from the site visit and stakeholder engagement agree with points in the Milton Keynes Mobility Strategy Evidence Base that investment in both infrastructure and behaviour change interventions can help maximise increases in walking and cycling
- The Milton Keynes Smarter Choices brand provided one-to-one Learn to Ride sessions for adults. The brand also recognises the importance of marketing material and promotion activities to engage the public in active transport. Effective "branding" of the Redway network was recognised as essential on our site visit and would support this initiative
- Compliance with the Redway Design manual was a metric in our appraisal framework

6.2 Integration with National Policy

DfT's Gear Change (DfT, 2020) is a visionary strategy which identifies how walking and cycling will be revolutionised across England. It is based around four themes.

The Gear Change Themes:

- *Theme 1 – Better streets for cycling and people*
- *Theme 2 – Cycling at the heart of decision-making*
- *Theme 3 – Empowering and encouraging Local Authorities*
- *Theme 4 – Enabling people to cycle and protecting them when they do*

It aspires that 'all new housing and business developments are built around making sustainable travel, including cycling and walking, the first choice for journeys. Also, aligned with the UK Government's Ten Point Plan for a Green Industrial Revolution, it aspires to empower and encourage local authorities to deliver new active travel infrastructure by 2025. A key element of qualifying for funding is through ensuring that new schemes comply with the key design principles identified in Local Transport Note (LTN) 1/20 (see Section 6.2.1) which includes ensuring cycling infrastructure is accessible, segregated from traffic, resilient to future usage increase, legible and direct and with consistent provision.

6.2.1 LTN 1/20 Cycle Infrastructure Design

It is important that Redways align with relevant guidance on shared use paths. LTN 1/20 clearly states that: *"Off-carriageway cycling provision may either be physically segregated from pedestrian facilities or a common surface may be shared."* Examples include:

- If well-designed and implemented in appropriate locations
- Alongside interurban and arterial roads where there are few pedestrians
- At and around junctions where cyclists are generally moving at a slow speed
- Where a length of shared use may be acceptable to achieve continuity of a cycle route
- Where high cycle and high pedestrian flows occur at different times
- Away from streets in locations such as canal towpaths, paths through housing estates, parks and other green spaces
- Alongside busy interurban roads with few pedestrians or building frontages

"The potential conflict between pedestrians and cyclists is often a concern when designing routes away from highways. Although there are few recorded collisions between pedestrians and cyclists on shared use paths, the fact that the two user groups travel at different speeds and sometimes in different directions, can affect the level of comfort of both groups. It is a particular concern for visually impaired people." (DfT, 2020)

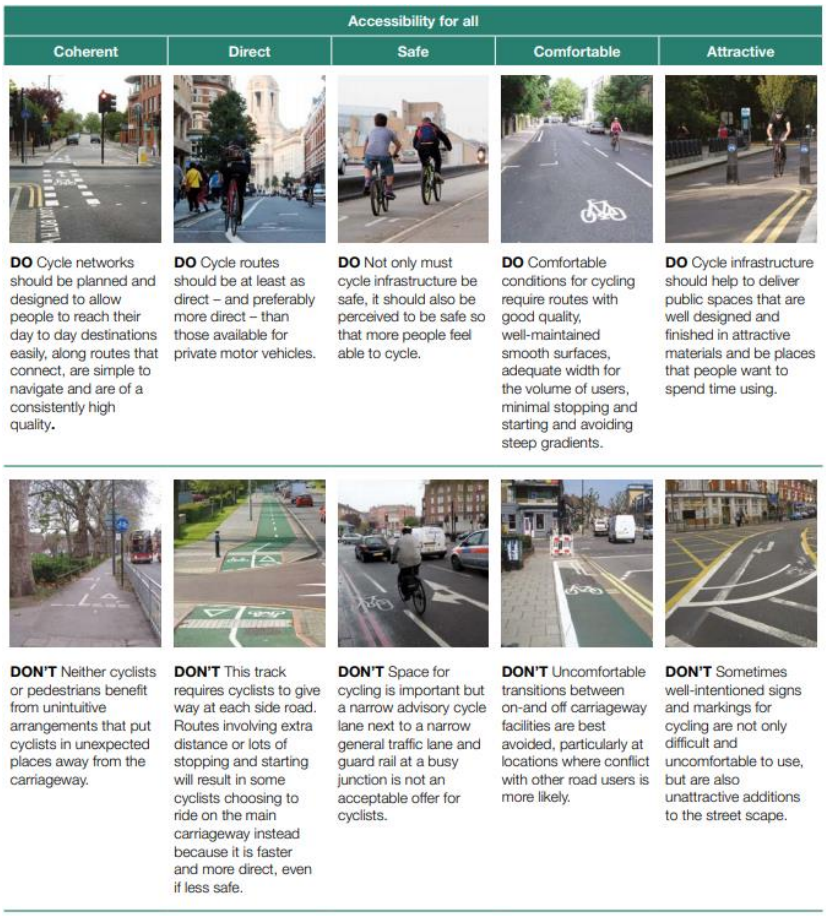


Figure 6-1: LTN 1/20 Core Design Principles

Figure 6-1 shows the core design principles from LTN 1/20.

The Redway network generally aligns with the DO category, however improvements could be made in directness at junctions and wayfinding.

Additionally, further investment needs to be made in traffic reduction, such as Low Traffic Neighbourhoods, to reduce traffic permeability and increase space and safety for active uses.

Maintenance plans are also required for maintaining smooth Redway surfaces, as they are often dug up for accessing services.

Each of the DON'T categories were observed on the existing Redway network, of particular prevalent issue was lack of priority given to Redways at junctions with side roads.

Additionally, to ensure funding for further Redways, Milton Keynes Council needs to simply and clearly justify any deviation from the guidance.

"Where schemes are proposed for funding that do not meet these minimum criteria, authorities will be required to justify their design choices. It still gives local authorities flexibility on design of infrastructure, but sets an objective and measurable quality threshold." (DfT, 2020)

The LTN 1/20 also sets out 22 summary principles which form an integral part of the guidance. Below is a selection of the relevant principles.

Principles	Description	Action From This LCWIP
Cycles must be treated as vehicles and not as pedestrians	On urban streets, cyclists must be physically separated from pedestrians and not share space. Where cycle routes cross pavements, a physically segregated track should be provided. At crossings and junctions, cyclists should not share the space used by pedestrians but should be provided with a separate parallel route	This means that for new Redways, where applicable, segregation of pedestrians and cyclists should be considered and, a plan for the segregation of existing high-volume routes should be created. Installing Tiger crossings would provide parallel crossing provision.
Cycle infrastructure should be designed for significant numbers of cyclists, and for non-standard cycles	To allow for high numbers of cyclists, including non-standard cycles such as cargo bikes, handcycles and trikes, cycle tracks should ideally be 2 m wide in each direction, or 3 to 4m (depending on cycle flows) for bidirectional tracks though there may have to be exceptions. Where a shared use facility is being considered, early engagement with relevant interested parties should be undertaken, particularly those representing disabled people, and pedestrians and cyclists generally. Engaging with such groups is an important step towards the scheme meeting the authority's Public Sector Equality Duty.	The Redway design manual states a minimum of 3m wide for bidirectional tracks, however this should be expanded wherever possible to provided additional width to accommodate high cycle volumes and non-standard cycles. This LCWIP recommends direct engagement with Royal National Institute of the Blind and other mobility impaired groups on their views on Redway segregation and widths.
Cycle infrastructure must join together, or join other facilities together by taking a holistic, connected network approach which recognises the importance of nodes, links and areas that are good for cycling	Routes should be planned holistically as part of a network.	This LCWIP has focused on joining up isolated stretches of Redway and areas without provision to the wider network, creating a more holistic network.
As important as building a route itself is maintaining it properly afterwards	Roads / paths get dug up by utility contractors, ignored in repaints or just worn away; tarmac is allowed to crack and part; tracks and lanes are seldom or never swept, leaving them scattered with debris and broken glass.	Schemes taken forward from this LCWIP should include a clear maintenance plan and Redway maintenance must be conducted more holistically to eliminate inconsistent surfaces from utilities.
Cycle routes must flow, feeling direct and logical	Users should not feel as if they are having to double back on themselves, turn unnecessarily, or go the long way round. Often, cycling schemes - when crossing main roads require cyclists to make a series of ninety-degree turns to carry out a movement that a motor vehicle at the same location could do without turning at all.	This is particularly relevant to the grid-like road network which prioritises vehicles over cycles resulting in indirect routes at junctions and non-linear routes across the town.

Table 6-1: Relevant LTN 1/20 Cycle Infrastructure Design Guidance Principles

6.3 Prioritisation of Long Listed Schemes

As outlined in Section 1.3, to inform prioritisation of scheme development and delivery, aligned to the Council's ambitions to address missing links in the Redways and support economic growth, Section 6.3.1 allocates the Long Listed schemes into categories shown in Figure 6-2.

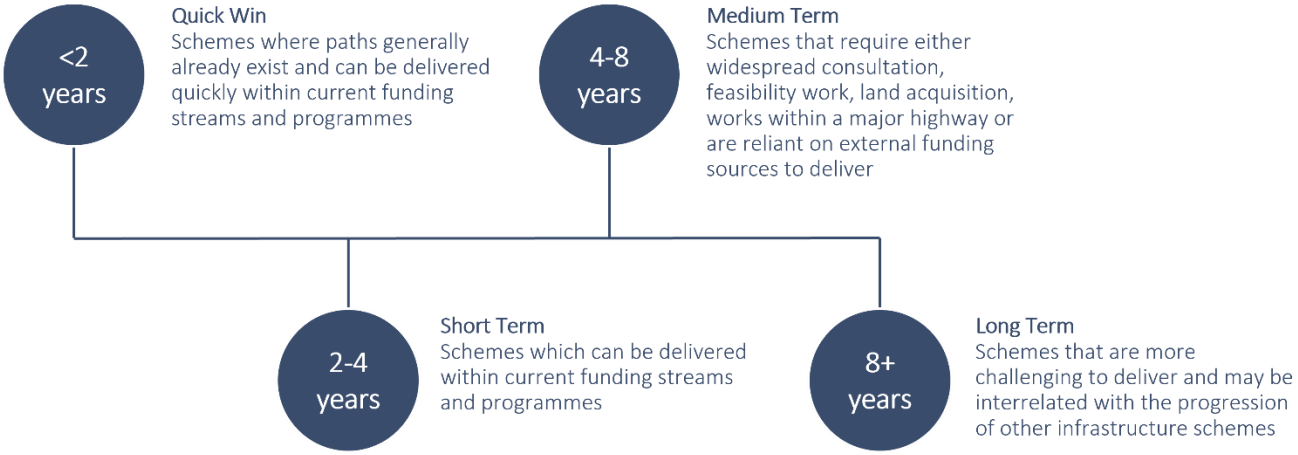


Figure 6-2: Network improvements delivery timescale

Nine schemes were identified as a to take forward for feasibility and transport studies in Bletchley (ongoing) and Wolverton, which each capture multiple schemes (see Section 6.3.2).

6.3.1 Delivery Timeframes of Schemes

Prioritisation of the Long List of schemes was based on the appraisal approach (see Section 5), where the top third (or so) of schemes were allocated across the four categories, based on indicative cost and deliverability. The remaining two thirds of schemes were allocated either Medium or Long Term, depending on indicative cost, deliverability and perceived benefit in that timescale.

	Quick Wins	Short Term	Medium Term	Long Term
Top 100 Scoring Schemes	26	29	20	25
Lower Scoring Schemes	n/a	n/a	125	48
Total	**26**	**29**	**145**	**73**

Table 6-2: Delivery Timeframes of Schemes

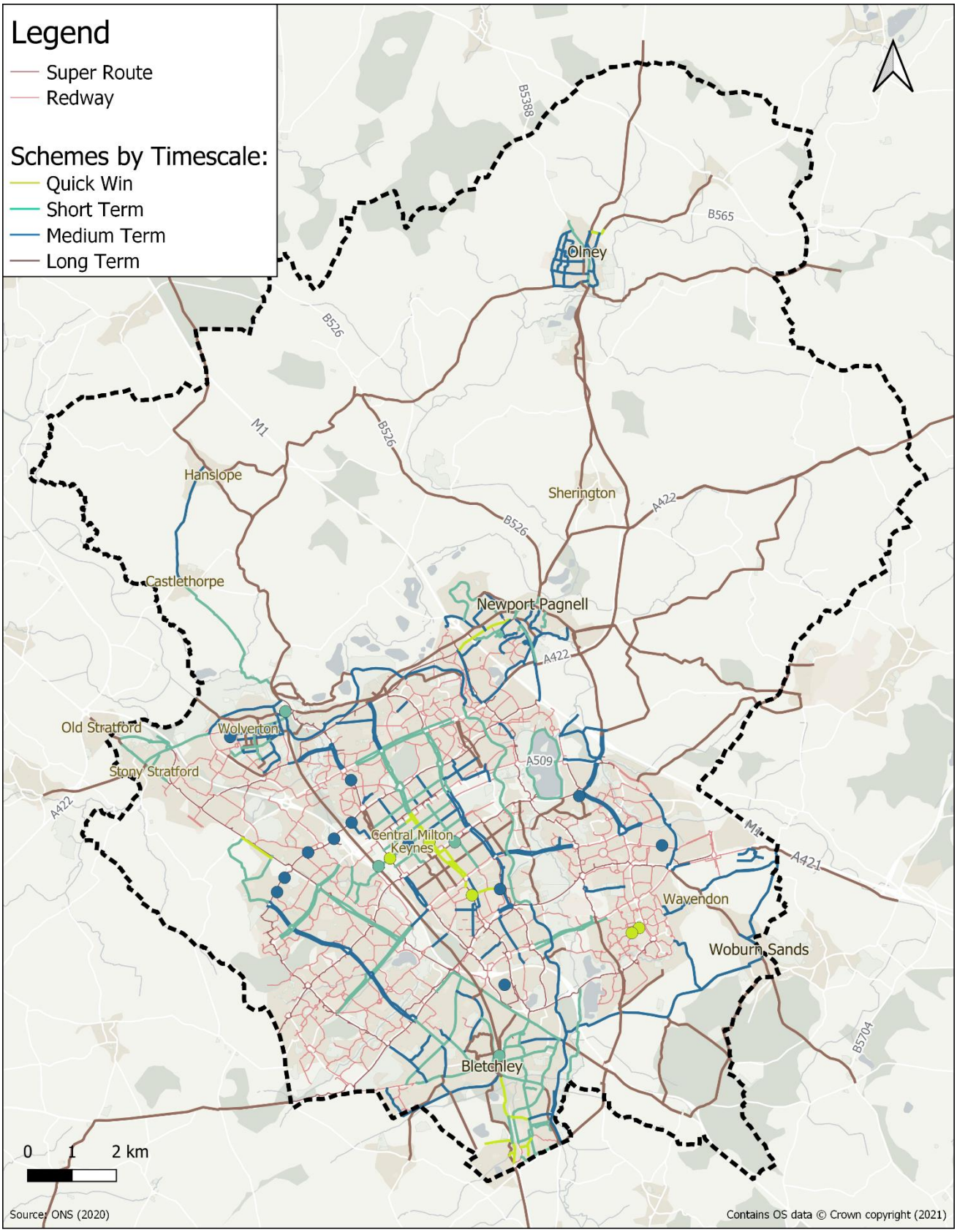


Figure 6-3: Delivery Timeframes of Schemes

6.3.2 Highlighted Schemes for Early Feasibility

It is likely that, in the future, favoured schemes will be adopted and delivered as funding becomes available. It was therefore decided to take a limited number of schemes forward for early feasibility in line with current available funding and resources. These schemes have been selected because they scored highly in the appraisal stage of the LCWIP. In some cases, they also bear many resemblances to other schemes that are likely to be adopted in the longer term and therefore feasibility design for these is likely to prove informative in the future. It must be noted that these are not the only schemes that we recommend taking forward.

6.3.2.1 Midsummer Boulevard, Central Milton Keynes

This scheme connects Milton Keynes Central train station to the Central Milton Keynes shopping district, along Midsummer Boulevard (see Figure 6-4).

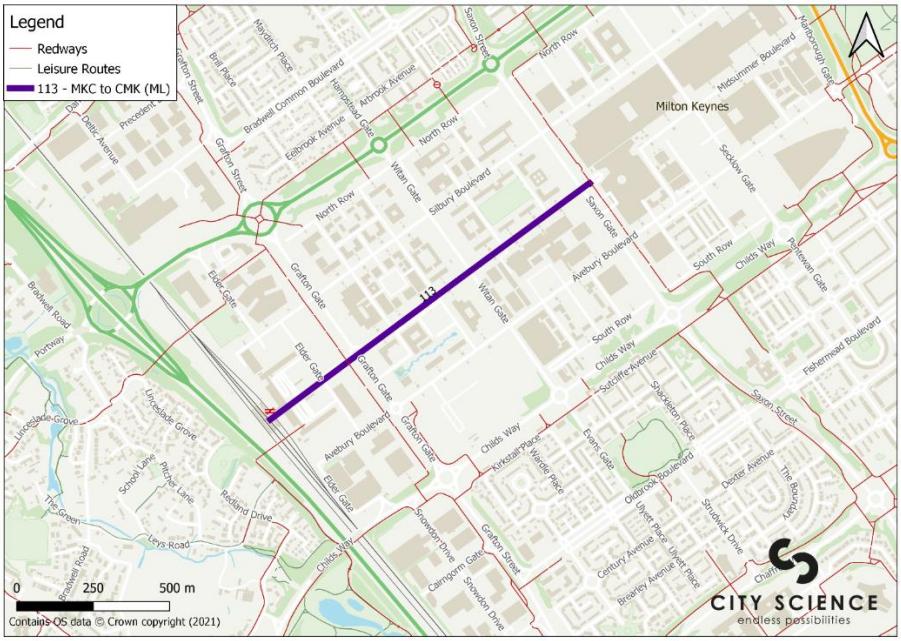


Figure 6-4: Scheme along Midsummer Boulevard, Central Milton Keynes

Currently there exists some pathways along this route (see Figure 6-5), but none are formally Redway as, due to the narrow footways alongside parking, cyclists are required to dismount (see Figure 6-6), leading to confusion over priorities and if cycling is permitted. The design of this scheme will also help inform how to include Redways along the other parallel routes in Central Milton Keynes (e.g. Silbury Boulevard and Avebury Boulevard (see Figure 6-7)).

Figure 6-5: Underpass Not Redway

Figure 6-6: Cyclist Dismount Sign

Figure 6-7: Avebury Boulevard

6.3.2.2 *Pentewan Gate Crossing, Milton Keynes*

This scheme is to improve the crossing of the Redway with Pentewan Gate just off H6 Childs Way (see Figure 6-8 and Figure 6-9). This is one of the only crossings along this stretch of Redway which is at grade and so creates a disjointed journey along this corridor. Beyond this there are concerns of safety at this junction, as it has limited visibility onto the connecting roundabout, with traffic coming off the national speed limit road at high speeds.

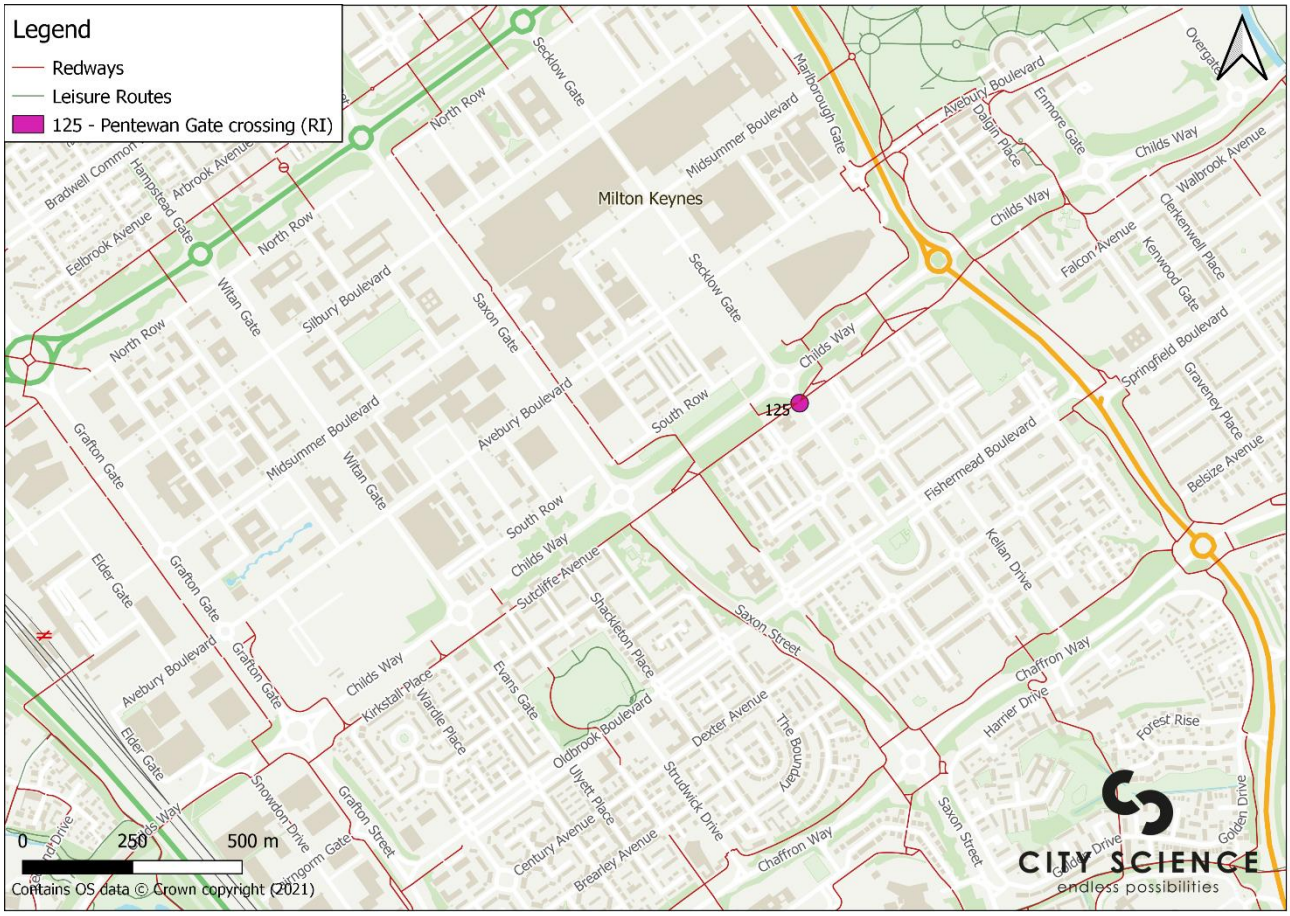


Figure 6-8: Pentewan Gate crossing scheme in Central Milton Keynes

Figure 6-9: Pentewan Gate Redway Crossing

There are multiple junctions like this around the Redway network and so producing a solution to this junction can provide a basis of how to improve similar junctions in the town.

6.3.2.3 *Fishermead to Central Milton Keynes*

This scheme provides a new route between Fishermead and Central Milton Keynes (see Figure 6-10). The scheme is split into two halves, both with their own challenges. The southern part of the scheme crosses through Fishermead, a residential suburb on the edge of Central Milton Keynes. Designing for this section will provide a blueprint of how to integrate similar schemes within other suburbs of Milton Keynes such as Oldbrook and Conniburrow. The northern part of the scheme crosses Central Milton Keynes along Secklow Gate, similar to the southern part of the scheme, this section can provide learnings on how to create similar schemes along the other gate roads in the centre (e.g. Witan Gate).

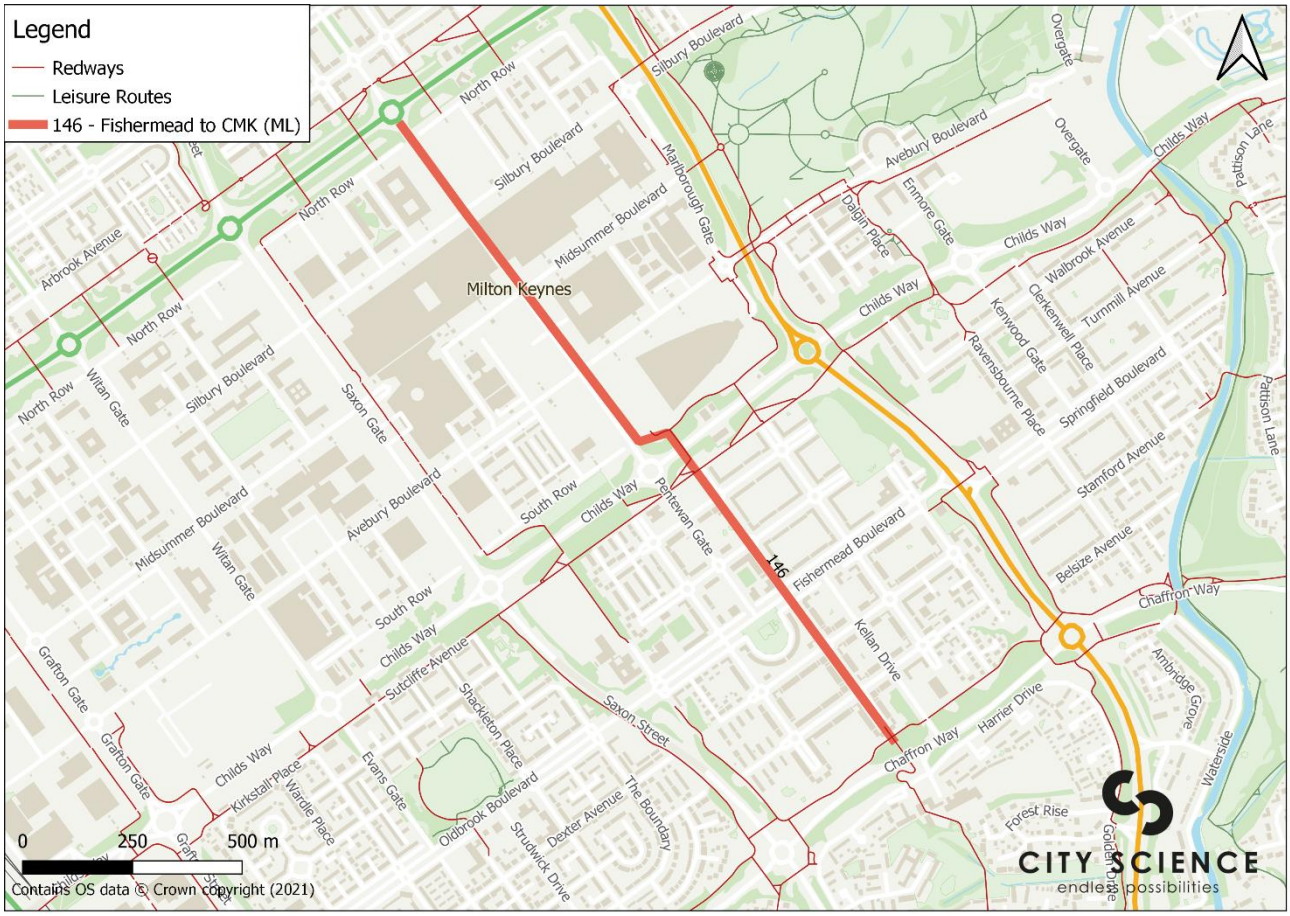


Figure 6-10: Scheme connecting Fishermead and Central Milton Keynes

6.3.2.4 H9 Groveway, Milton Keynes

This scheme aims to join up existing sections of Redway along the H9 Groveway near Ouzel Valley Park (see Figure 6-11). The indicative route shown below runs along both sides of the road however, provided sufficient crossings, only one side would need to be provided for this scheme to create a consistent link and benefit users. This scheme combines the creation of new Redway links and improvements to the existing Redway sections to make for a consistent link along the grid road. This has the potential to be a high-volume route, so it is recommended that this new link provides some segregation between pedestrians and cyclist as per LTN 1/20 (see Section 6.2.1). It also provides the opportunity to create a blueprint of how to upgrade the grid road Redways so they are more direct (little diversion at junctions and crossings) and low gradients making them more accessible than some parts of the network are currently.

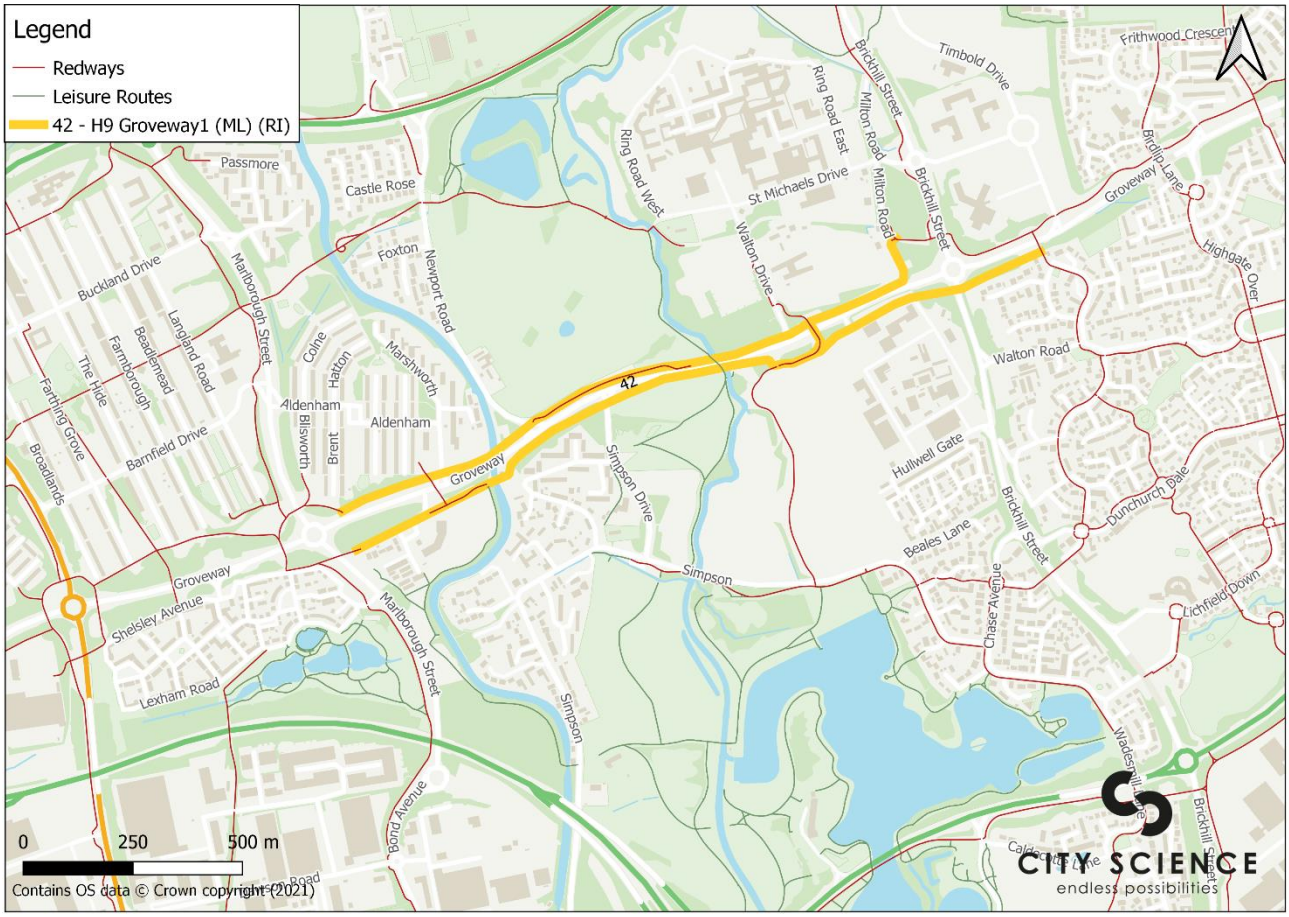


Figure 6-11: Scheme along the H9 Groveway in Milton Keynes

6.3.2.5 Watling Street, Bletchley

This scheme provides a strategic east-west link to the north of Bletchley connecting to the edge of the existing Redway network (see Figure 6-12). This is not envisaged to be a continuous corridor, but instead to consider:

- EAST: Formalising and improving the Redway between Fenny Stratford and the underpass to ASDA and IKEA
- WEST: Investigating provision of formal crossing points to link with existing Redways (see Figure 6-12)

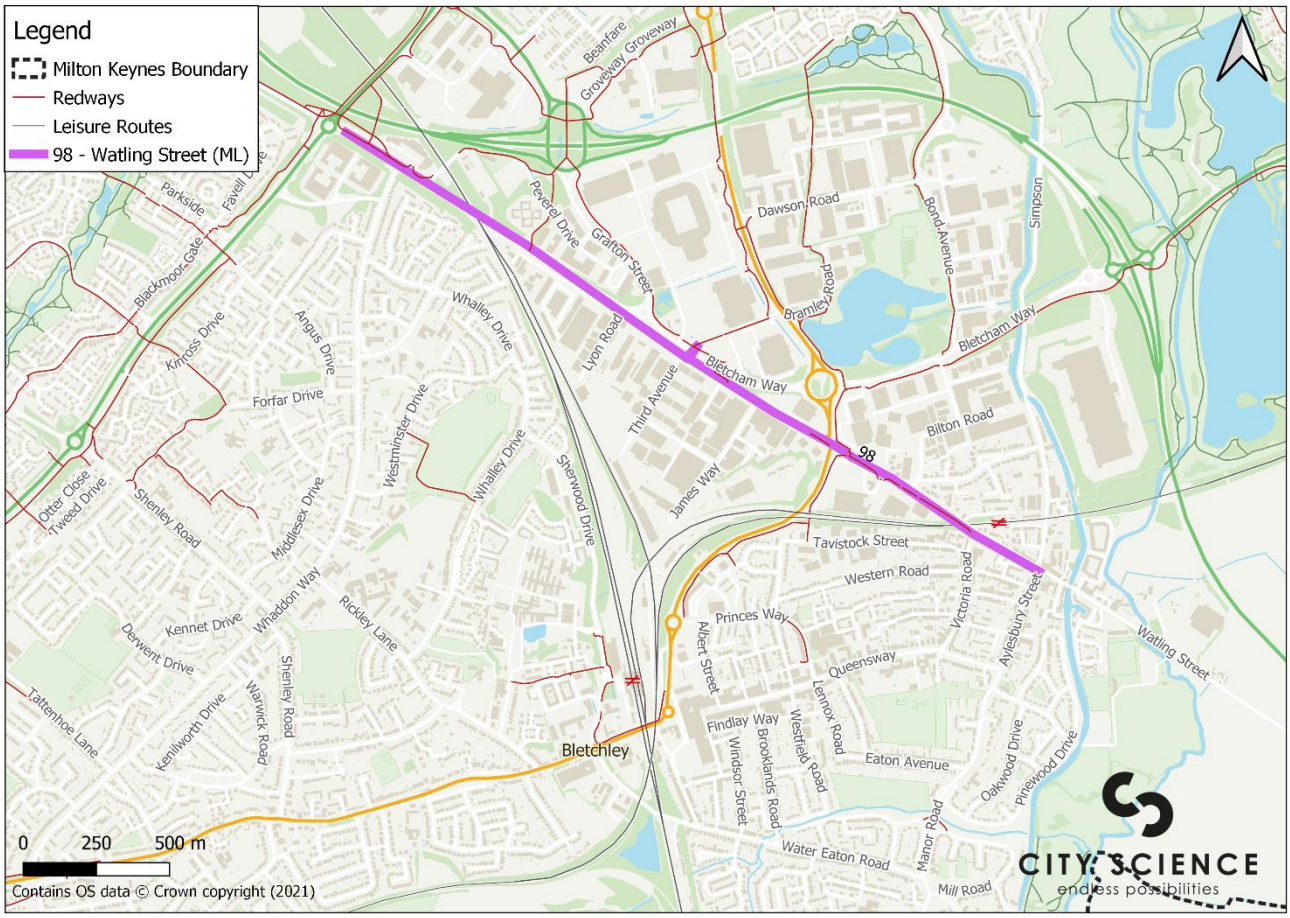


Figure 6-12: Scheme along Watling Street, Bletchley

Figure 6-13: Watling Street Redway

Figure 6-14: No Crossing between Redways

Figure 6-15: No Crossing between Redways

6.3.2.6 Sherwood Drive, Bletchley

This scheme improves the existing pathways along Sherwood Drive and allows for a safer link between Bletchley Station and Whalley Drive, see Figure 6-16. This would provide improved access to Bletchley Park and to MK College's Bletchley campus, as well as an additional cycle route between Central Bletchley and the rest of Milton Keynes, along Whalley Drive.

Figure 6-16: Scheme along Sherwood Drive, Bletchley

Figure 6-17: Sherwood Drive

6.3.2.7 Buckingham Road, Bletchley

This scheme provides a strategic east-west movement along Buckingham Road in Bletchley, connecting Central and West Bletchley (see Figure 6-18). As shown, there are existing Redways at either end, but not in the centre of the corridor. Approximately half of this scheme has a large grass berm on the southern side, whilst the other half is fairly constrained in terms of carriageway width.

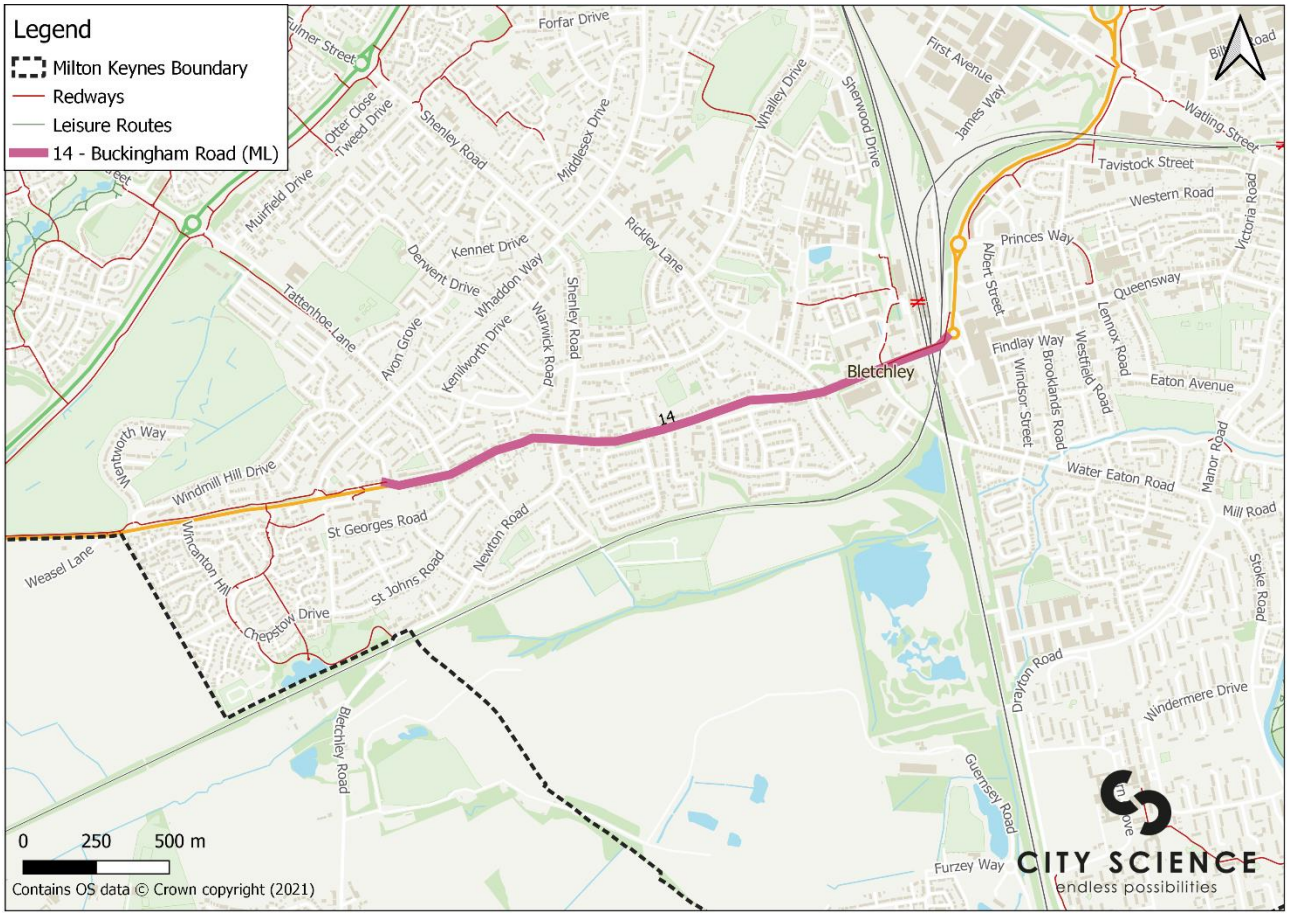


Figure 6-18: Scheme along Buckingham Road, Bletchley

6.3.2.8 Wolverton Station Access

This scheme links the existing Redway, Wolverton Station and town centre (see Figure 6-19). This involves one of the following to connect the Redway to the station entrance:

- Continuing the existing Redway around and providing a crossing of Stratford Road to the station
- Providing a route through the trees and a crossing of Stratford Road to the station
- Providing a route through the trees to railway land and under the railway arches into the station

The scheme would then include a Redway on Stratford Street (see Figure 6-20) to the town centre with access to the canal (west side) via the Secret Garden (see Figure 6-21). Additional considerations include connecting the canal (east side) to the stairs between Platform 1 and Stratford Road (see Figure 6-22).

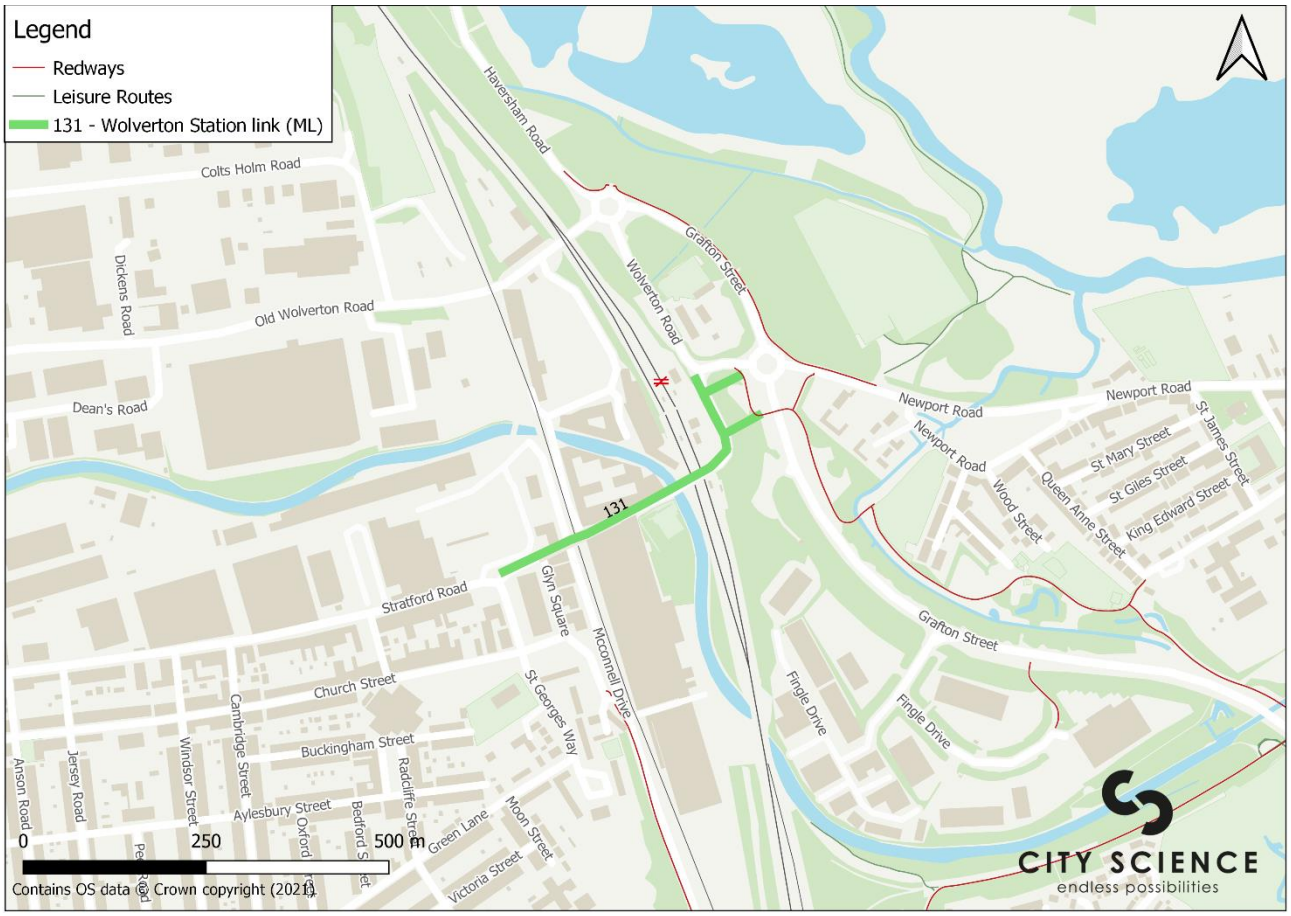


Figure 6-19: Wolverton Station access scheme

Figure 6-20: Stratford Road

Figure 6-21: Access to Secret Garden

Figure 6-22: Canal (east side)

6.3.2.9 Castlethorpe to Wolverton

This scheme follows Route 6 of the National Cycle Network between Castlethorpe and Wolverton (see Figure 6-23). This scheme has already been earmarked for development by Sustrans as it lies mainly on the National Cycle Network for which they are responsible. This scheme passes mainly through rural areas, running adjacent to the railway line. Whatever is developed for this scheme could be used as a basis for other rural links throughout the borough.

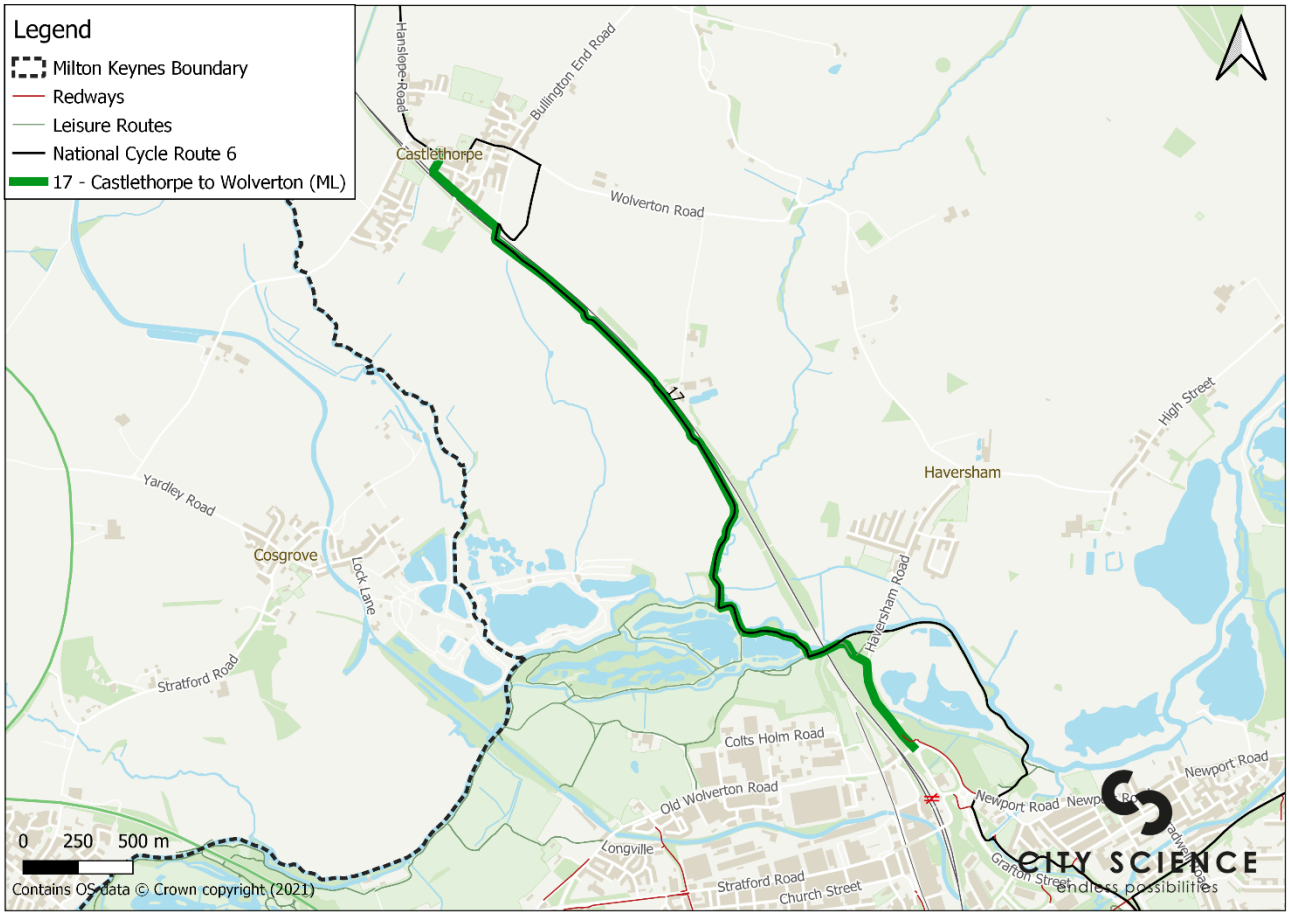


Figure 6-23: Scheme connecting Castlethorpe to Wolverton along the National Cycling Route

6.3.3 Priority Areas for Transport Studies

6.3.3.1 Central Bletchley

Five schemes within Central Bletchley are recommended to be developed as part of the Bletchley Transport and Parking Study currently being undertaken as part of the Supplementary Planning Document for Bletchley. These schemes, shown in Figure 6-24, include Queensway (Scheme 188), Saxon Street and station access (Schemes 129 & 194), Princes Way (Scheme 192) and improving the provision on North Street (Scheme 191) as part of Route 6 of the National Cycle Network. These are all focusses for the transport study.

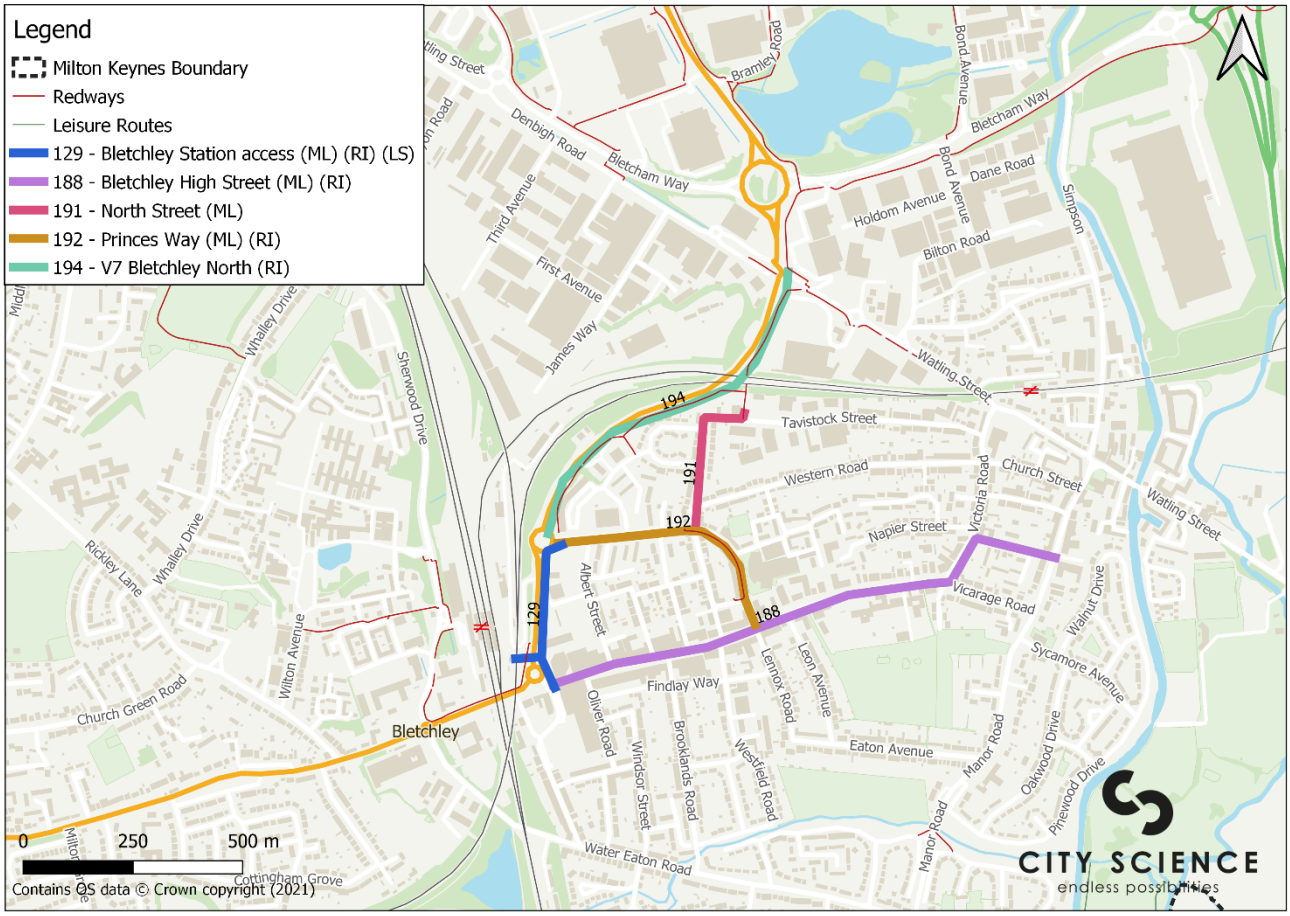


Figure 6-24: Schemes in Central Bletchley

6.3.3.2 *Wolverton Town Centre*

Due to the high number of schemes proposed within Wolverton, and the complexity of the town with narrow, historic roads and high volumes of on-street parking it is recommended that a comprehensive study of Wolverton is undertaken. This study should look at how best to create these walking and cycling links across the town which could be through Redways, cycle lanes or LTNs. It should also incorporate a review of parking across the town, looking at how changes to on-street parking could aid in the creation of more pedestrian and cyclist friendly streets.

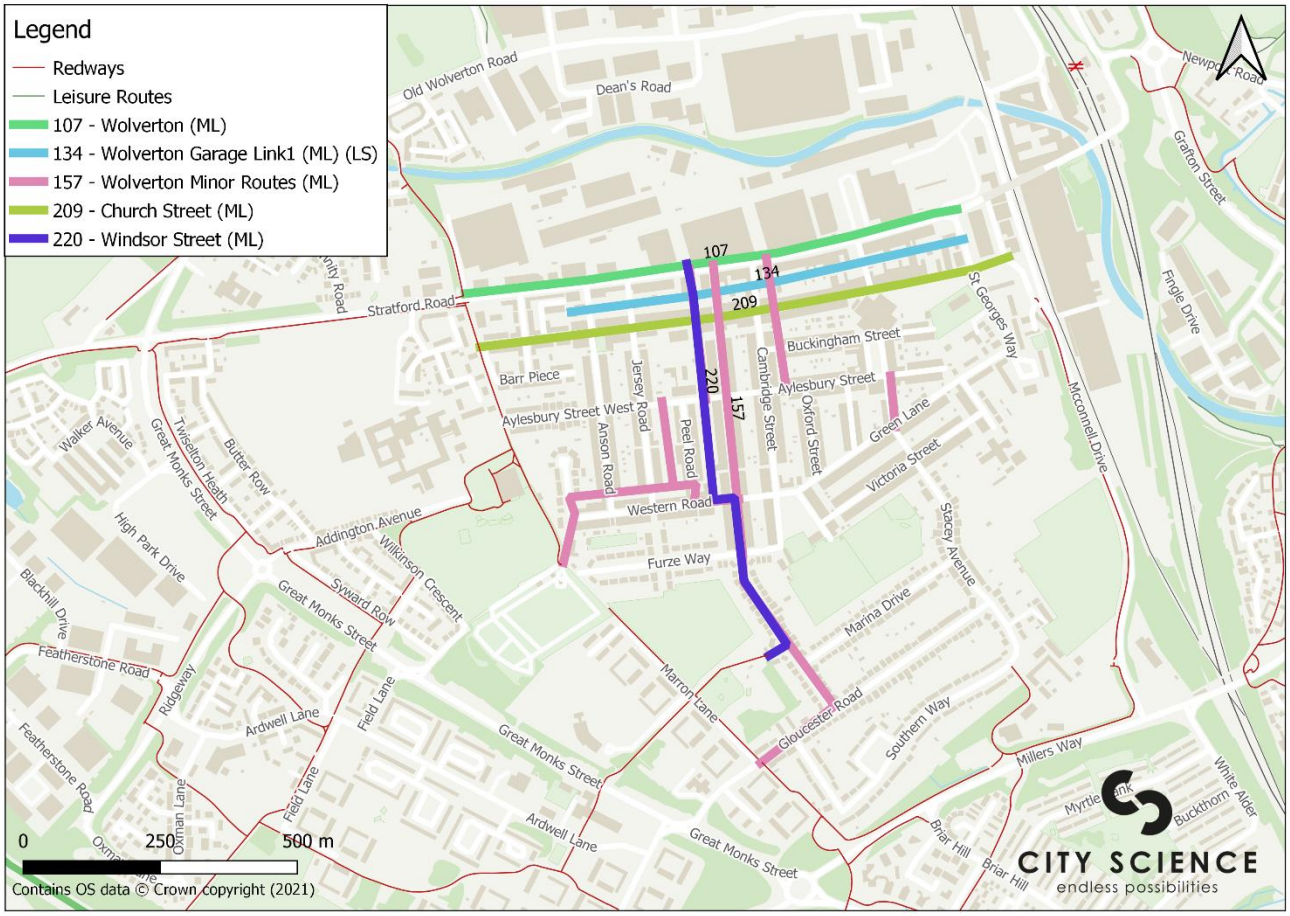


Figure 6-25: Schemes within Wolverton Town Centre

This study should particularly focus on the form and function of the three parallel routes of

- Stratford Road (Scheme 107), which is the main through route
- Church Street (Scheme 209), which is the high street
- The wide alley way between them (Scheme 134), which provides rear access

Further consideration should also be given to using the canal as a bypass for the Redway and improving links to the station (see 6.3.2.8).

6.4 Recommendations beyond Missing Links

In addition to the list of missing links and infrastructure improvements described in Chapter 5, over the course of the LCWIP other issues with the Milton Keynes Redway network became apparent.

6.4.1 Redway Design Specifications

In line with Government guidance, Redways provide physical segregation of cyclists from traffic on carriageways and at many junctions and side road crossings. Additionally, LTN 1/20 specifically states that: "On urban streets, cyclists must be physically separated from pedestrians and should not share space with pedestrians". The aim is to achieve this where possible (particularly in high volume and urban areas), by providing as many separate options as possible, such as wide paths and parallel provision in high-flow (more than 300 pedestrians and more than 300 cyclists per hour) areas, notably along the proposed Redway Super Routes and in urban areas such as Central Milton Keynes. Direct engagement will be required with the DfT, where significant width and/or parallel provision cannot be provided.

In the recent consultation on the 2020 Redway design guidance (update forthcoming, to replace the existing 1991 Redway design guidance) there are certain proposed criteria a pathway must fulfil in order to be classed as a Redway. These include:

- Minimum usable width of 3m with additional width where features that bound the Redway (such as a kerb) reduce the usable width, with minimum usable width of 5m in high demand areas (see Figure 6-26, from 2020 consultation)
- Minimum curve radius of 25m on a Redway Super Route and 15m on a regular route, with design speeds of 20mph and 12mph respectively
- Priority for Redway users over road users at crossings of relatively lightly trafficked streets (<4000 vehicles per day, ≤30mph), applying flat-topped road hump to ensure low vehicle speeds

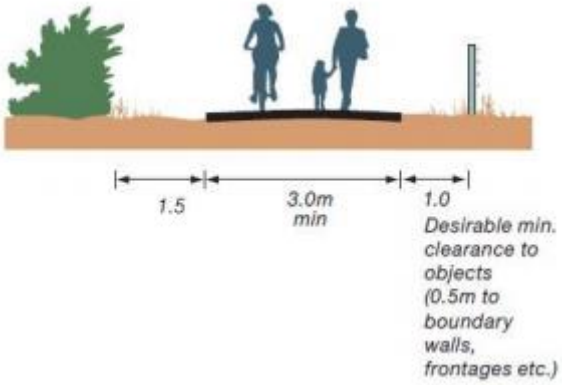


Figure 6-26: Standard Cross Section for a Shared Use Redway (Source: 2020 Redway Design Guide Consultation)

Although these are valuable design criteria to aspire to, they are not always possible along every section of Redway and it is important that areas do not miss out on network development and spaces are not utilised because they do not fit this criteria perfectly. It is therefore recommended that a sliding scale for each metric (e.g. 3m to 5m) is adopted in the guidance and Redways are classified on a spectrum of adherence (with low adherence being defined as something other than Redways). This would allow more paths (such as existing leisure routes) to be included in the Redway network maps, with plans to further enhance them over time.

It would also help to clearly define Redway Super Routes as these would be delivered with all design specifications at the high end of the scale and be given clearly marked priority over other Redways at crossings. Installation of further cycle counters along Redway Super Routes is also recommended to actively monitor their usage, visually showing these volumes to users, as well as informing future development of the network and the prioritisation of maintenance resources.

Also, following the recent change to the highway code creating a hierarchy of users which would give pedestrians and cyclists increased priority over vehicles at junctions, it is recommended a review of the latest draft of the Redway design guidance to include giving Redways priority at minor road crossings. Again, this is particularly important for Redway Super Routes. It is recommended that a review of crossings (particularly around the busy grid roads and Central Milton Keynes area) is carried out to ensure that all junctions are suitably compliant with this new guidance.

It is also recommended that the updated Redway design guidance ensure that diversions of routes around major road junctions (e.g. grid roads and roundabouts) are kept to a minimum and prioritise giving Redways the most straightforward and shortest route through an intersection. Currently there are a large number of diversions around junctions which are convoluted and add significant time and distance to Redway users' journey, which could lead to some more confident cyclists choosing to cycle on the road instead of the Redway which would increase the likelihood of a collision.

6.4.2 Wayfinding & Signage

Signage over the network is inconsistent and can cause confusion for users of the Redways. This LCWIP recommends the creation of a network signage plan that can be integrated across the network.

LTN 1/20 - Principle 10: Schemes must be legible and understandable

Cyclists, pedestrians and motorists alike must be in no doubt where the cycle route runs, where the pedestrian and vehicle space is and where each different kind of user is supposed to be. Some schemes deliberately create confusion or ambiguity with, for instance, only minimal signs in a paved area to show that cycling is permitted. This is another way of managing cyclist-pedestrian interactions that inhibits cycling and is not suitable for places with large numbers of cyclists and pedestrians (DfT, 2020)

It is advised that key routes such as the Redway Super Routes and links to key destinations (such as the hospital and Stadium MK) be prioritised, as well as improved signage to bus stops and public transport hubs to better integrate the active travel and public transport networks. A range of signage options should be considered, including colour coding of areas to create dementia friendly spaces and the addition of journey time estimates for both pedestrians and cyclists.

LTN 1/20 - Principle 11: Schemes must be clearly and comprehensively signposted and labelled

Users must feel like they are being guided along a route. They should not have to stop to consult maps or phones. Directions should be provided at every decision point and sometimes in between for reassurance. Signs should be clear, easily visible and legible (DfT, 2020)

As part of any wayfinding or signage implementation along the network, it is recommended to increase the number of cycle counters. This would allow an improved understanding of the network and would help to direct priority routes for maintenance or upgrading as part of the Super Routes programme.

6.4.3 Underpasses

There are a large number of underpasses along the Redway network to help cross the large grid roads in the town. They are functional, with a few maintenance issues but the predominant issue is that they create a perception of poor safety. Responses during the stakeholder engagement in this LCWIP showed overwhelmingly that people, predominantly women, do not feel safe walking through the underpasses, especially at night. As removing them entirely is an unrealistic solution, it is proposed that the underpasses should be enhanced through the use of increased lighting, local art and local engagement, some of which is already being investigated and carried out by the Council. Where possible, future schemes should follow routes that are well overlooked to improve safety.

6.4.4 Identity

By creating a stronger identity for the Redway network, public trust in the network can be improved and uptake of active travel increased. One element of achieving a stronger identity is creating a "brand" for the Redway network. This brand should be used consistently on the ground and on public facing materials relating to the Redway network. For example, the signage in any London Underground station matches the Tube Map in style.

On the Redways, standardised signage and surface colour, as well as consistent use of street furniture such as yellow bollards can be used to convey a brand. Public facing material such as network maps, online information, cycling proficiency booklets, etc, should also be designed with the brand in mind. The phrase “Respect, Protect, Enjoy” forms the backbone of the Redway Code. This caption could be incorporated into the branding of the Redway itself, appearing on signage, maps and cycling proficiency certificates.

Making the Redway network a cultural asset is another effective way of improving the identity of the Redways. The installation of artwork by local artists and school children is one example of how the spaces on the Redways could be improved as well as linking them with their surrounding communities. Incorporating elements of local history or nearby land use could also help to improve sense of place. For example, introducing a railway theme along the old railway corridor or linking the theme on the Redways in Bletchley with Bletchley Park.

6.4.5 Accessibility and Inclusivity

There are some accessibility issues currently over the Redway network including parked cars creating a barrier to accessing the Redways. It is recommended that a review of on-street car parking is carried out near junctions with the Redways to ensure that a car isn’t able to park obstructing either the path or the visibility at the junction.

6.4.6 Maintenance

Although maintenance is out of scope of this LCWIP, it was an issue which was brought up multiple times throughout the project. As such, it was deemed relevant to comment on the maintenance plan for new and existing infrastructure within the borough.

Bringing all the current Redways up to a consistent standard would improve user experience and encourage habitual use. It is advised that there is consistent upkeep of the following:

- Surface quality
- Street furniture such as lighting, bins, bollards and benches
- Accuracy of signage which often appears worn out or defaced
- Litter picking
- Planting

Stakeholder engagement and our site visit revealed that a lot of private properties back onto the Redways. This gives them ownership of cutting the vegetation back. There is a need to have some rule or regulation on how to deal with this situation. This is out of the strategic scope of this LCWIP but recommended for investigation, however it is preferable that future developments front onto Redways, rather than back onto them to remove dispute around responsibility for maintenance and improve user experience.

It is also recommended that a comprehensive maintenance plan is created as part of the creation of any new infrastructure to ensure that it is suitably maintained to enhance its benefits.

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Appendix A – Evidence Base Report
Appendix B – Full List of LCWIP Schemes (Maps)
Appendix C – Full List of LCWIP Schemes (Table)