Chichester City Local Cycling & Walking Infrastructure Plan (LCWIP)

May 2020

Produced by Transport Initiatives 

supported by PJA

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Contents

Checking / sign off	
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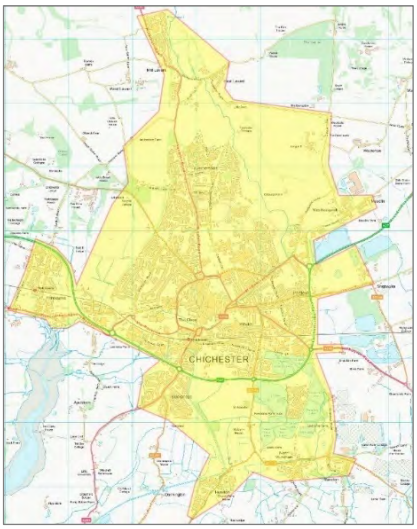
Executive Summary

Aim and brief



In 2019 Chichester District Council (CDC) commissioned Transport Initiatives, with support from PJA, to develop a Local Cycling and Walking Infrastructure Plan (LCWIP) for the City of Chichester (area shown to the right).

A range of tasks were carried out for the study, which was developed in parallel with the county-wide LCWIP produced by West Sussex County Council (WSCC).

The potential for cycling was assessed using a tool developed by the Department for Transport (DfT). Options were developed for safe, convenient and attractive cycle routes, based on site visits plus advice from councillors, officers and stakeholders. These were then assessed in detail. The assessment of walking was focused on the city Core Walking Zone (CWZ), plus two main routes between the CWZ and outlying areas.

As part of the study, two workshops were held with key stakeholders including councillors and officers from both CDC and WSCC, other statutory bodies, private companies and voluntary and community groups.

Development of the LCWIP has taken into account other schemes being promoted by WSCC as well as proposed developments across the area. Meetings with officers of both WSCC and CDC were held to ensure projects being led by developers as part of the planning process were also covered in the study.

Just before completion of the LCWIP the world was hit by the COVID-19 pandemic. This has had an unprecedented effect on the lives of everyone in the UK. The impact on transport has led to increased cycling, which has been supported by Government policy and funding.

Research

A detailed analysis of the area was carried out using the Propensity to Cycle Tool (PCT) which incorporates data from the 2011 census. This showed relatively high rates of cycling in areas of Chichester (compared to elsewhere in West Sussex), with potential for increase. A desk-based audit of existing provision for cycling across the highway network was carried out, based on the Bikeability training levels needed to use the network safely. This confirmed that there was inconsistent provision for safe and convenient cycling within the study area.

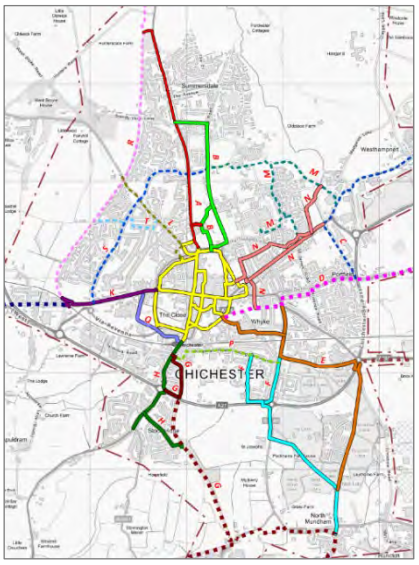
While there is no equivalent for the PCT for walking, the 2011 census data was used to show areas with higher and lower rates of walking.

Analysis

Based on the PCT, a number of potential cycle routes were proposed and refined following an iterative process. A cycle network of around 57km of routes was identified including main routes and links. The routes were then analysed using the DfT's Route Selection Tool (RST) which assesses five key criteria: Connectivity, Safety, Directness (deviation from straight line distance), Gradient and Comfort. The RST also records the number of Critical Junctions.

An assessment of walking in the CWZ was carried out, using the DfT's Walking Route Assessment Tool (WRAT). This showed where provision for walking is good or poor. The two highest priority routes between the CWZ and outer areas (to the north and west) were also assessed using the WRAT. The process could be repeated for other routes if required.

Proposals



Based on the RST assessments, proposals were developed to improve the cycle routes to be promoted by CDC (solid lines on the plan to the right). Proposals for the other routes are being led by other promoters, including WSCC, Highways England, developers or another body.

A set of "Do Minimum" measures were produced showing the minimum requirements to make routes fit for purpose, plus "Do More" measures that would upgrade them to a higher quality (e.g. protected cycle lanes or separate tracks).

Proposals were also drawn up to improve walking in the CWZ and on the two identified routes.

Costs and Funding

The outline cost for the LCWIP is estimated at £6.7 million *("Do Minimum")* or £16.7 million *("Do More"),* including a 15% uplift for contingency/optimism bias. As in most area wide projects, a variety of sources will be needed to supplement CDC and WSCC funds, including government funding (such as the Emergency Active Travel Fund), external grants and contributions from developers and other third parties.

It is important to note that the LCWIP is intended as a 10 year programme for the delivery of infrastructure. The average cost of around £0.7m/year for the *Do Minimum* measures is equal to around £18/year for each person in the LCWIP area, a significant increase on current levels of expenditure. This matches the level generally regarded as the minimum needed to have a significant impact on cycling levels, including by the All Party Parliamentary Cycling Group report "Get Britain Cycling" in 2013.

The annual expenditure to deliver Do More measures would be £1.7m (over £40/person annually). This would lead to a higher level of mode shift to cycling, as well as benefitting walking. There would be a significant positive impact on the city's environment and economy.

Next steps

The next stage of the LCWIP is to prioritise the proposed interventions. This will be carried out by WSCC in conjunction with the county-wide, South Downs and other area LCWIPs. It will include a Multi-Criteria Assessment Framework to allow proposals in different areas and LCWIPs to be assessed on the same basis. Some interim measures may be delivered via COVID-19 recovery.

CDC will then consider how best to associate the LCWIP with the revised Local Plan as it emerges. This will include the possibility of inclusion of the LCWIP schemes in CDC's Infrastructure Business Plan (IBP). This prioritises the infrastructure needed to support growth via a five year rolling programme for delivery, together with possible funding broken down by source.

It is intended that the LCWIP will be reviewed in response to new funding and delivery opportunities and/or in five years' time, in order to ensure that delivery of active travel infrastructure is sustained.

1. Introduction

1.1 Aim of study

The LCWIP study was commissioned by Chichester District Council (CDC) in 2019.

The overall aim of the study is to deliver:

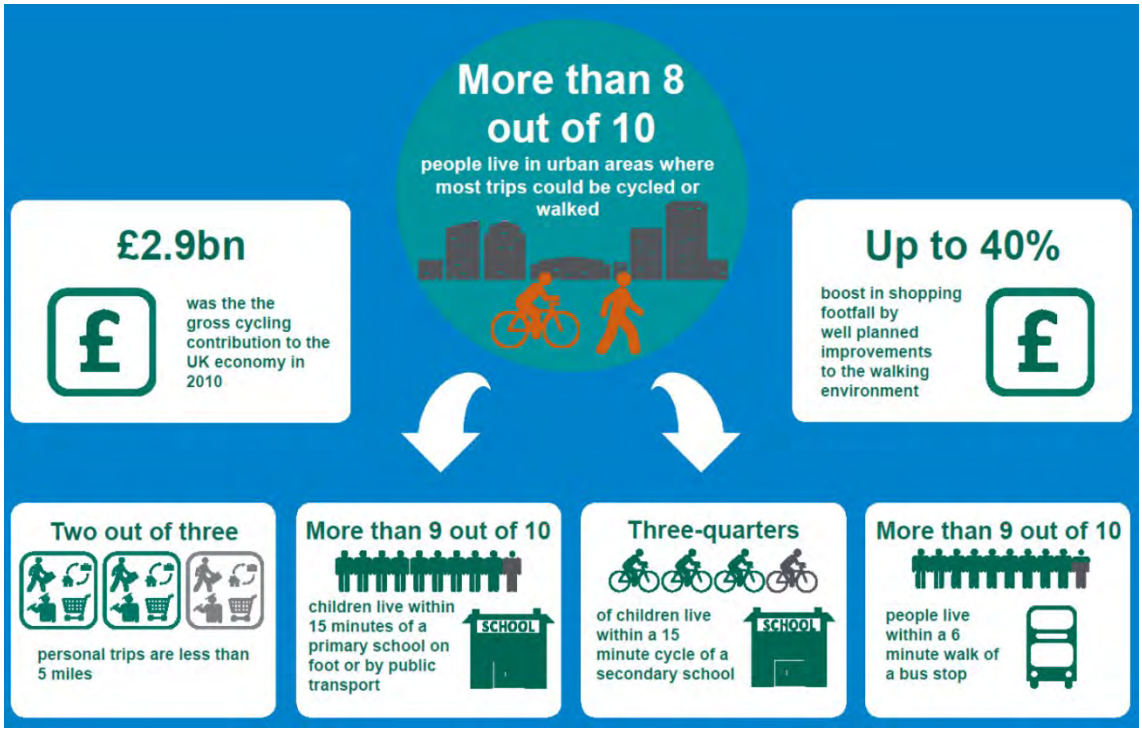
- A network plan for walking and cycling within Chichester City, identifying preferred routes and core zones for further improvement
- A programme of infrastructure improvements for future investment
- A report setting out the underlying analysis, with a narrative supporting the identified improvements and network
- Assistance with public engagement

1.2 Background to LCWIP

In 2017 the Government published its first Cycling and Walking Investment Strategy (CWIS). This was a requirement of the Infrastructure Act 2015 which placed a duty on the Secretary of State for Transport to develop "Cycling & Walking Investment Strategies" with objectives & financial resources.

The 2017 CWIS set out why cycling and walking are considered important by the government. It states that the aim is *"to make cycling and walking the natural choices for shorter journeys, or as part of a longer journey".* In February 2020 the first report to parliament was made on progress in delivering the CWIS[1].

CWIS Figure 1: Opportunities from cycling and walking

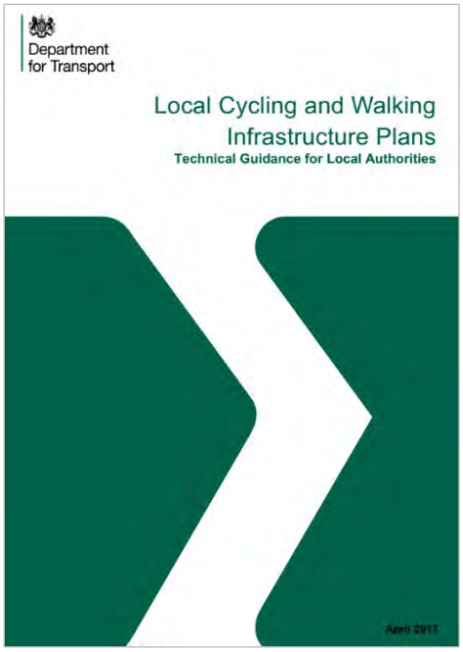


[1] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/863723/cycling-and-walking-investment-strategy-report-to-parliament.pdf

As part of the CWIS, the DfT set out an expectation that local authorities would develop a Local Cycling and Walking Infrastructure Plan (LCWIP) for their area. The LCWIP is intended to deliver a strategic approach to identifying cycling and walking improvements required at the local level. They enable a long-term approach, ideally over a 10 year period, and form a vital part of the Government's objectives to increase the number of trips made on foot or by cycle.

Detailed technical guidance on developing an LCWIP was issued in April 2017[2]. This states that the LCWIP's key aims should be:

- To develop a planned **cycle network** connecting key origins and destinations
- To provide high quality **walking environments**



The LCWIP should include the following outputs:

- A **network plan for cycling and walking** which identifies preferred routes and core zones for further developments
- A **prioritised programme** of infrastructure improvements for future investment
- A **report setting out the underlying analysis** with a clear explanation to support the network and improvements

The guidance sets out six stages for the LCWIP process, shown in Table 1 below. This LCWIP report covers Stages 2 to 4. It was initially intended to also include Stage 5. However, this will now be delivered by WSCC in conjunction with the county-wide and South Downs National Park Authority (SDNPA) LCWIPs (see Sections 1.3 and 7.3). This will allow proposals in different areas and LCWIPs to be assessed on the same basis.

Table 1: LCWIP stages and names

Stage	Name	Tasks
1	**Determining scope**	Establish geographic extent and governance
2	**Gathering information**	Review policies, collate information on existing network and trips, identity main destinations
3	**Network planning for cycling**	Identify potential trips and develop routes
4	**Network planning for walking**	Identify potential trips and develop area proposals
5	**Prioritising improvements**	Appraisal and prioritisation of proposals
6	**Integration and application**	Incorporate into local plans and strategies

[2] https://www.gov.uk/government/publications/local-cycling-and-walking-infrastructure-plans-technical-guidance-and-tools

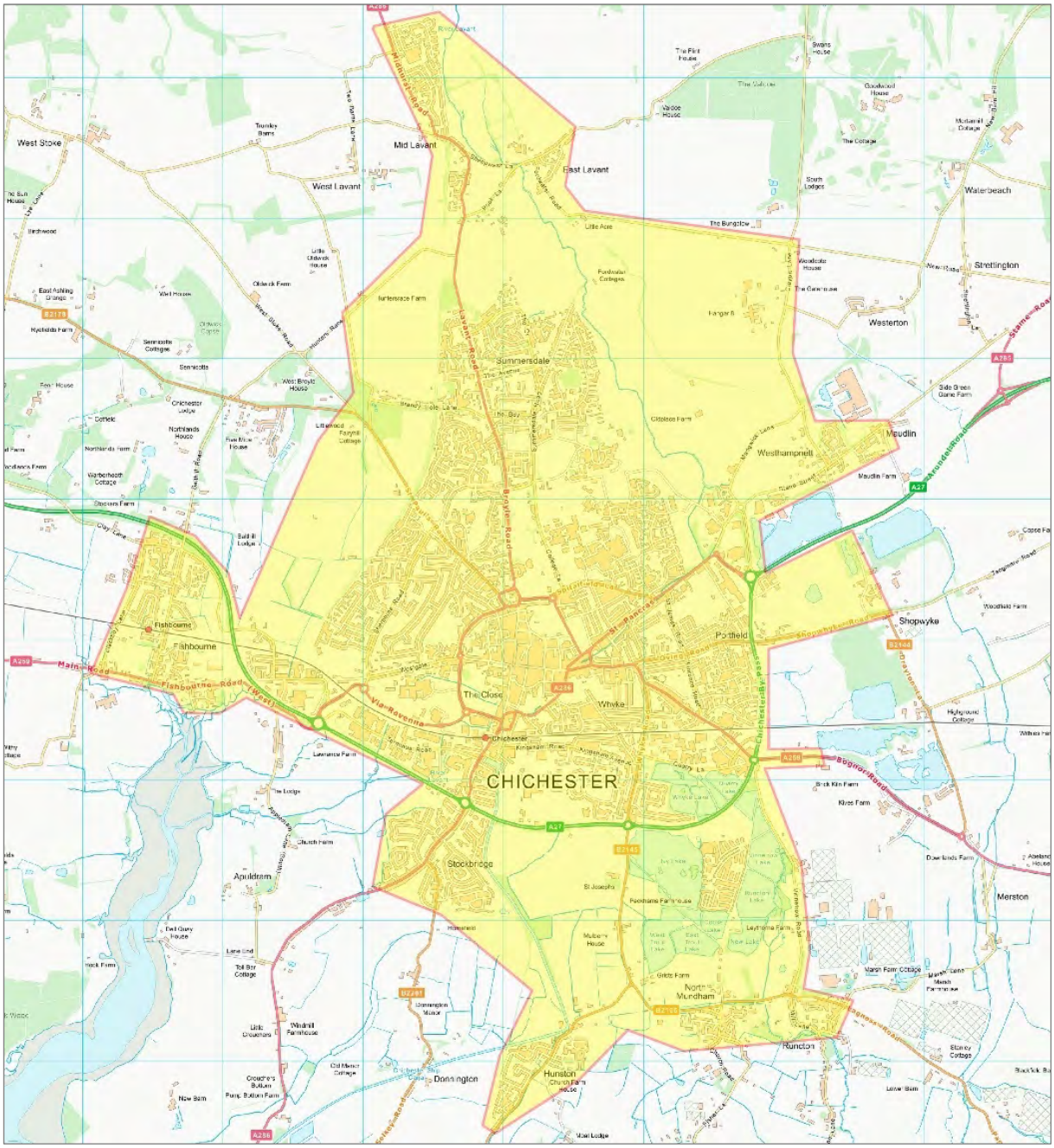
1.3 LCWIPs in West Sussex & Chichester

In 2018, the DfT launched a bid process to offer LCWIP support to a limited number of local authorities. A partnership of West Sussex local authorities, led by West Sussex County Council (WSCC), successfully bid for this support to help develop LCWIPs in the county. WSCC's support has been divided in three ways:

- County-wide LCWIP, looking at strategic routes
- Four locality based LCWIPs (Adur & Worthing, Chichester, Crawley and Horsham)
- South Downs National Park Authority (SDNPA) LCWIP

Stage 1 of the LCWIP process (scoping) was carried out by WSCC and CDC. As part of this stage it was agreed that the Chichester LCWIP should cover the main urban area of Chichester City and adjacent smaller settlements. The LCWIP area is shown in Plan 1 below.

Plan 1: Chichester LCWIP area



1.4 Chichester City area

Chichester District Council (CDC) covers a mostly rural area of over 300 square miles in the west of West Sussex. It has an overall population of around 129,000 (2018 estimates).

As a second tier authority it has a range of responsibilities and powers, including planning and parks. However, most issues affecting transport, including walking and cycling, are the responsibility of West Sussex County Council (WSCC) which is the Highway Authority. This includes public Rights of Way

Much of the district falls within the South Downs National Park, administered by SDNPA. It also includes the Chichester Harbour Area of Outstanding Natural Beauty as well as two National Nature Reserves and many smaller green spaces.

Chichester itself is a cathedral city and the county town of West Sussex (with a city council operating as the third tier of local government). It lies just north of the coast with the SDNP immediately to the north. Chichester has a long history as a settlement from Roman times and was important in Anglo-Saxon times. It is the seat of the Church of England Diocese of Chichester, and Chichester Cathedral itself dates back to the 12th century.

Chichester is served by the West Coastway rail line between Brighton and Portsmouth/ Southampton, with Chichester and Fishbourne stations in the LCWIP area. There are regular mainline services to and from London as well as to Worthing and Brighton in the east and Havant, Portsmouth and Southampton to the west.

The city is also the hub of several main road routes. While the A27 south coast trunk road bypasses the city to the south, other main roads such as the A259, A285 and A286 run through the built-up area of the city.

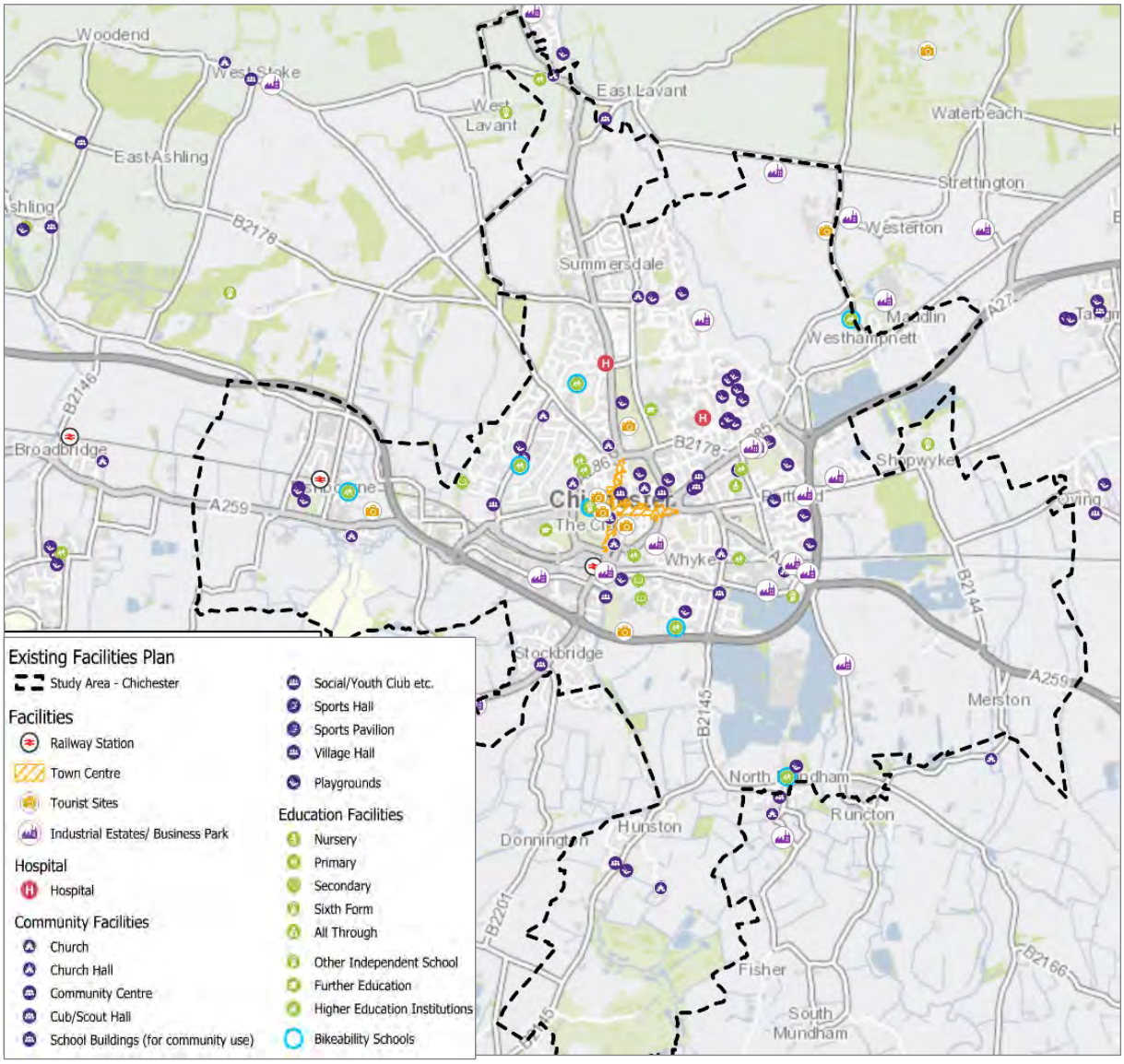
The city has a wide range of businesses, including Rolls Royce Motor Cars, Mercer and the UK headquarters of John Wiley publishers. However, the largest employers are in the public sector: St Richard's Hospital is the largest with over 4,000 staff, with West Sussex County Council and Chichester District Council combined employing over 3,000 staff. Education is also an important focus, with many schools in the LCWIP area. Chichester College is the largest Further Education establishment on the South Coast, with over 20,000 full- and part-time students. The University of Chichester has over 5,000 students at its campus just north of the city centre.

There is also a strong tourism and leisure focus. There are many visitor attractions, including the cathedral, Chichester Festival Theatre, a number of museums (including Pallant Gallery and Fishbourne Roman Palace, just west of the city) and Goodwood Racecourse (just outside the LCWIP area to the north east). The surrounding coast and countryside are also a significant attraction for many visitors. A number of attractive traffic-free routes offer cycling and walking allow access to these from Chichester, including Centurion Way, Salterns Way and the Chichester Canal towpath (leading to the Selsey Greenway).

The LCWIP area comprises the city plus adjacent settlements, including Fishbourne, Lavant, Westhampnett, North Mundham, Hunston and Stockbridge. It has a population of around 38,000 of which around 32,000 are in Chichester City itself (2018 estimates).

Plan 2 below shows the location of key facilities in and around the LCWIP area.

Plan 2: Main facilities in and around the LCWIP area



Access to Chichester Festival Theatre from Northgate car park

2. Existing cycling & walking

2.1 Summary

Establishing the demand for cycling and walking is a key part of the LCWIP. The following tasks were carried out to deliver this:

- Research into general travel flows in West Sussex and Chichester (based on WSCC data)
- Analysis of cycling and walking data in the LCWIP area
- Audit of cycling and walking provision in the LCWIP area
- Workshop with stakeholders to gather views on key issues and locations

2.2 Travel to work in West Sussex

In 2013 WSCC produced a Census Bulletin[3] with transport data from the 2011 census. This provides a wide range of information about travel patterns across the county.

Figure 1: West Sussex Car or Van Availability 2001-2011

Figure 1 from the Census Bulletin shows that the majority (61%) of households in West Sussex have access to no more than one car or van. Assuming an average of two people per household this means that around 40% of residents do not have access to a private motor vehicle. Many of these will be people who are unable to drive, especially children.

[3] *Travel to work and car or van ownership in West Sussex*
https://www.westsussex.gov.uk/media/2702/censusbulletin_traveltowork.pdf

Figure 2: Method of Travel to Work 2011

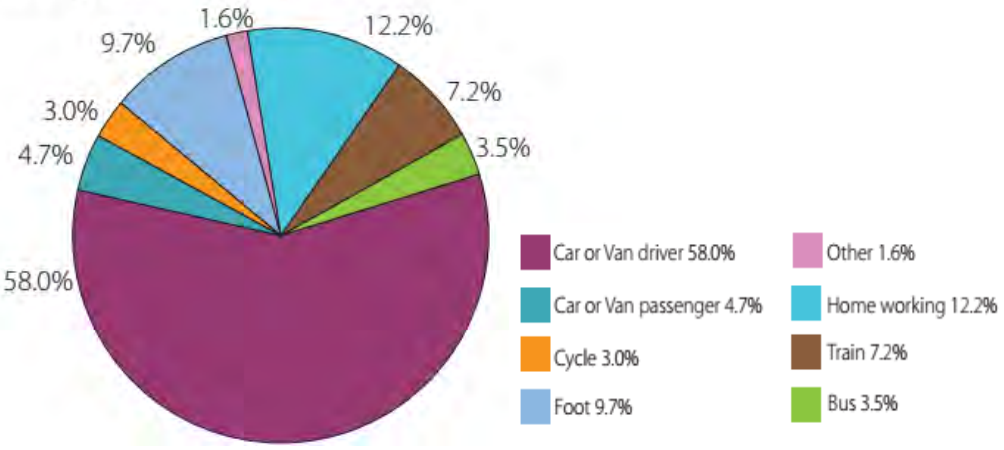


Figure 2 shows the overall split across West Sussex between different modes (including working from home). The dominant mode is car or van, with walking being just under 10%. At 3%, cycling is higher than the national average and on a par with bus use.

Figure 3: West Sussex Distance Travelled to Work 2001-2011

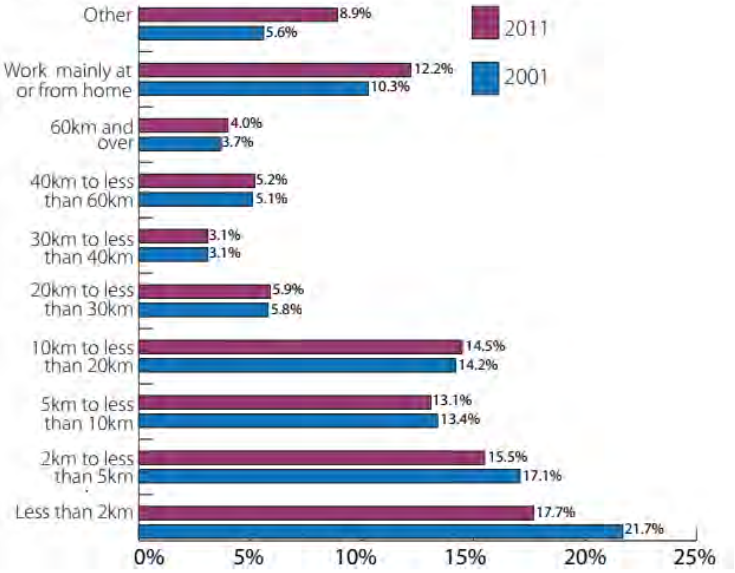


Figure 3 of the Census Bulletin showed the proportion of trips of different lengths. Around 40% of all trips to work are under 5km (3 miles) in length. Despite this, most trips in the county are made by car or van. The high level of short trips demonstrates the potential for increased travel by walking and especially cycling.

The Census Bulletin also includes an appendix with detailed data on trips in local areas of West Sussex. The selections relevant to the Chichester LCWIP are shown below. Note that the column refers to Chichester City only – this does not include the outlying settlements in the LCWIP area. However, these only make up a small proportion of the overall population.

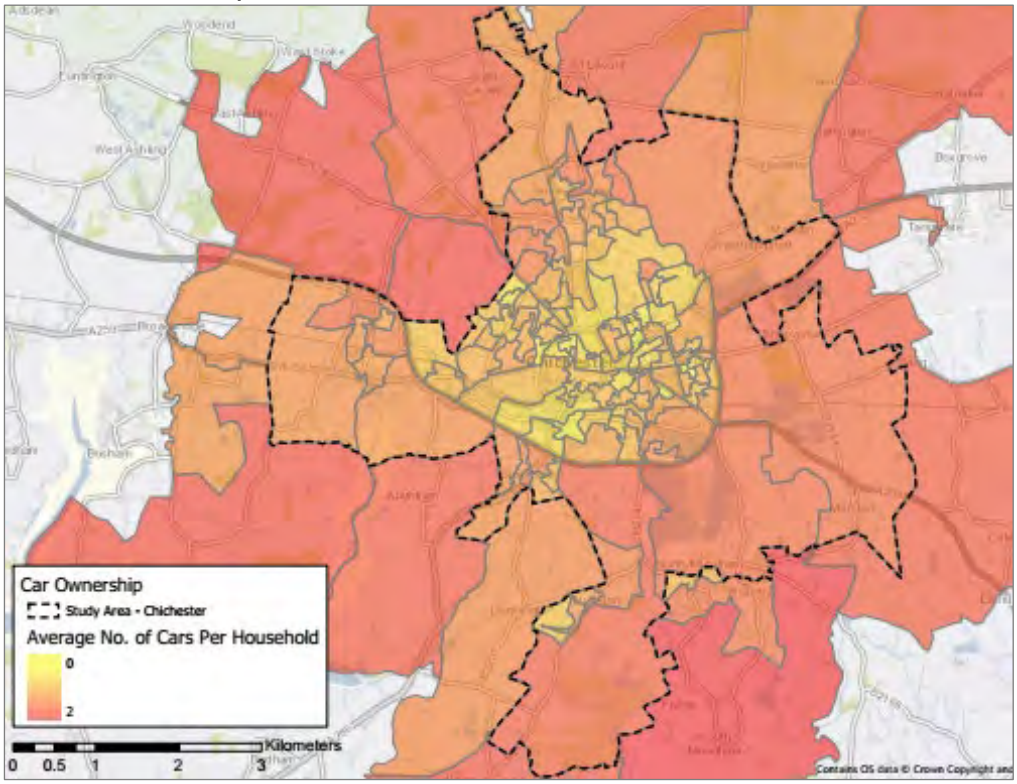
Appendix B.1 Car and van availability (2011)

	Adur District	Shoreham-by-Sea	Arun District	Bognor Regis	Littlehampton	Arun Rural	Chichester District	Chichester City	Chichester Rural
All households	**26,957**	14,736	**66,706**	28,932	22,080	15,694	**49,848**	12,316	37,532
No Cars or Vans in Household	**20.6%**	20.7%	**19.5%**	22.2%	21.9%	11.3%	**15.6%**	27.3%	11.8%
1 Car or Van in Household	**46.6%**	46.2%	**45.2%**	44.9%	47.1%	43.0%	**42.0%**	46.1%	40.7%
2 Cars or Vans in Household	**25.7%**	25.9%	**27.0%**	25.2%	24.5%	33.8%	**30.8%**	21.0%	34.0%
3 Cars or Vans in Household	**5.3%**	5.3%	**6.2%**	5.8%	5.0%	8.5%	**8.0%**	4.1%	9.3%
4 or More Cars or Vans in Household	**1.9%**	1.9%	**2.1%**	2.0%	1.5%	3.3%	**3.6%**	1.5%	4.3%
All Cars or Vans in the Area	**32,921**	18,014	**84,886**	35,136	25,982	23,768	**71,848**	13,183	58,665
Cars or Vans per household	***1.22***	*1.22*	***1.27***	*1.21*	*1.18*	*1.51*	***1.44***	*1.07*	*1.56*

Car and van ownership is lower in Chichester City than anywhere else in West Sussex. Around 27% of households do not have a car or van and nearly half (46%) have only one. The average of 1.07 car or van per household is also the lowest in the county and only increased slightly between 2001 and 2011.

Plan 3 shows the distribution of car ownership in the LCWIP area, showing the concentration of low car ownership in the centre of the city.

Plan 3: Car ownership in and around the LCWIP area



Reflecting the lower level of car ownership in the LCWIP area, the proportion of residents travelling to work by car is around 50%, around 10% lower than the county average. Notably, the overall level of walking (24%) and cycling (8%) are much higher than the county averages (10% / 3% respectively), and are in fact the highest levels in West Sussex.

It is also notable that 10% of residents in employment work from home. However, this is half the rate in the rural areas of CDC, which has the highest level in the county.

Appendix C.1 Method of Travel to Work (2011)

	Adur District	Shoreham-by-Sea	Arun District	Bognor Regis	Littlehampton	Arun Rural	Chichester District	Chichester City	Chichester Rural
Home working	**10.2%**	10.8%	**12.5%**	12.2%	10.3%	15.8%	**16.4%**	9.9%	18.4%
Train	**7.3%**	7.8%	**4.4%**	2.9%	5.3%	5.9%	**4.3%**	3.6%	4.5%
Bus	**5.5%**	6.2%	**2.4%**	3.4%	2.0%	1.2%	**1.9%**	2.1%	1.9%
Car or van driver	**58.3%**	56.0%	**60.8%**	59.5%	60.4%	63.7%	**56.4%**	46.6%	59.4%
Car or van passenger	**5.1%**	4.8%	**6.1%**	7.4%	5.9%	4.1%	**3.9%**	4.6%	3.8%
Cycle	**3.7%**	3.9%	**3.6%**	4.0%	4.3%	2.2%	**4.1%**	7.8%	2.9%
Foot	**7.8%**	8.3%	**8.3%**	8.9%	9.9%	5.4%	**11.3%**	23.9%	7.4%
Other	**2.1%**	2.1%	**1.8%**	1.8%	1.9%	1.7%	**1.7%**	1.6%	1.8%
All people aged 16-74 in employment	29,356	16,557	67,443	29,304	21,156	16,983	53,285	12,594	40,691

The length of trips gives some indication of why this might be the case. Over half of work trips made by residents of the Chichester City area are under 5km (3 miles), with a high level of 40% of trips under 2km (NB this excludes people working from home). This is the highest level in the county, although at 48% Worthing is a close second.

There is a clear contrast with the travel patterns of the workforce in Chichester City (not shown) where around 30% have a trip to work of 5km or less.

Appendix D.1 - Distance Travelled to Work (2011)

	Adur District	Shoreham-by-Sea	Arun District	Bognor Regis	Littlehampton	Arun Rural	Chichester District	Chichester City	Chichester Rural
Less than 2km	**16.6%**	17.4%	**17.0%**	18.0%	22.0%	9.0%	**19.0%**	39.9%	12.6%
2km to less than 5km	**16.9%**	12.7%	**12.6%**	12.6%	13.4%	11.8%	**10.6%**	11.1%	10.5%
5km to less than 10km	**20.2%**	24.7%	**19.2%**	23.0%	13.0%	20.6%	**11.5%**	7.8%	12.6%
10km to less than 20km	**12.3%**	9.9%	**13.3%**	9.8%	17.1%	14.6%	**14.5%**	9.1%	16.2%
20km to less than 30km	**3.8%**	3.8%	**5.1%**	5.1%	4.4%	6.1%	**6.2%**	5.7%	6.3%
30km to less than 40km	**3.8%**	4.6%	**2.7%**	2.2%	2.7%	3.5%	**2.8%**	1.6%	3.2%
40km to less than 60km	**1.3%**	1.4%	**3.1%**	2.6%	3.2%	3.8%	**3.7%**	3.8%	3.7%
60km and over	**4.4%**	5.7%	**4.6%**	3.9%	4.8%	5.5%	**5.5%**	3.7%	6.1%
Work mainly at or from home	**10.2%**	12.4%	**12.5%**	12.2%	10.3%	15.8%	**16.4%**	9.9%	18.4%
Other	**10.4%**	12.1%	**9.9%**	10.6%	9.2%	9.4%	**9.8%**	7.4%	10.5%

2.3 Data on cycling & walking in Chichester

National Travel Survey (2017-18)

DfT figures from 2017-18 showed that 18.1% of adults in Chichester District (as a whole) cycled at least weekly, either for travel or leisure (the highest levels in West Sussex), with 4.6% cycling five times a week. The figures for cycling for travel only were 8.4% and 2.4% respectively.

The equivalent figures for walking show that 75.6% of adults in Chichester walked at least weekly, either for travel or leisure, with 41.2 doing so five times a week. The figures for walking for travel only were 41.6% and 18.6% respectively.

Census data (2011)

The 2011 census revealed a high level of cycling, with 4.9% of trips to work by cycle in Chichester District (as a whole). Many of these were within the LCWIP area.

Table 2 below shows the level of cycling to work in wards either partly or fully in the LCWIP area. The four wards in the city had levels of cycling to work ranging from 7% to 11%. Wards immediately outside the city itself also had higher than average levels of cycling, with both Donnington and Fishbourne exceeding 8% despite the severance created by the A27.

Only 13.5% of trips to work in the CDC area were on foot, though in Chichester City the levels were much higher, ranging from 22.7% to 29.4%. Apart from Donnington, walking levels in neighbouring areas were much lower than for the four city wards, with distance presumably having a greater effect than for cycling.

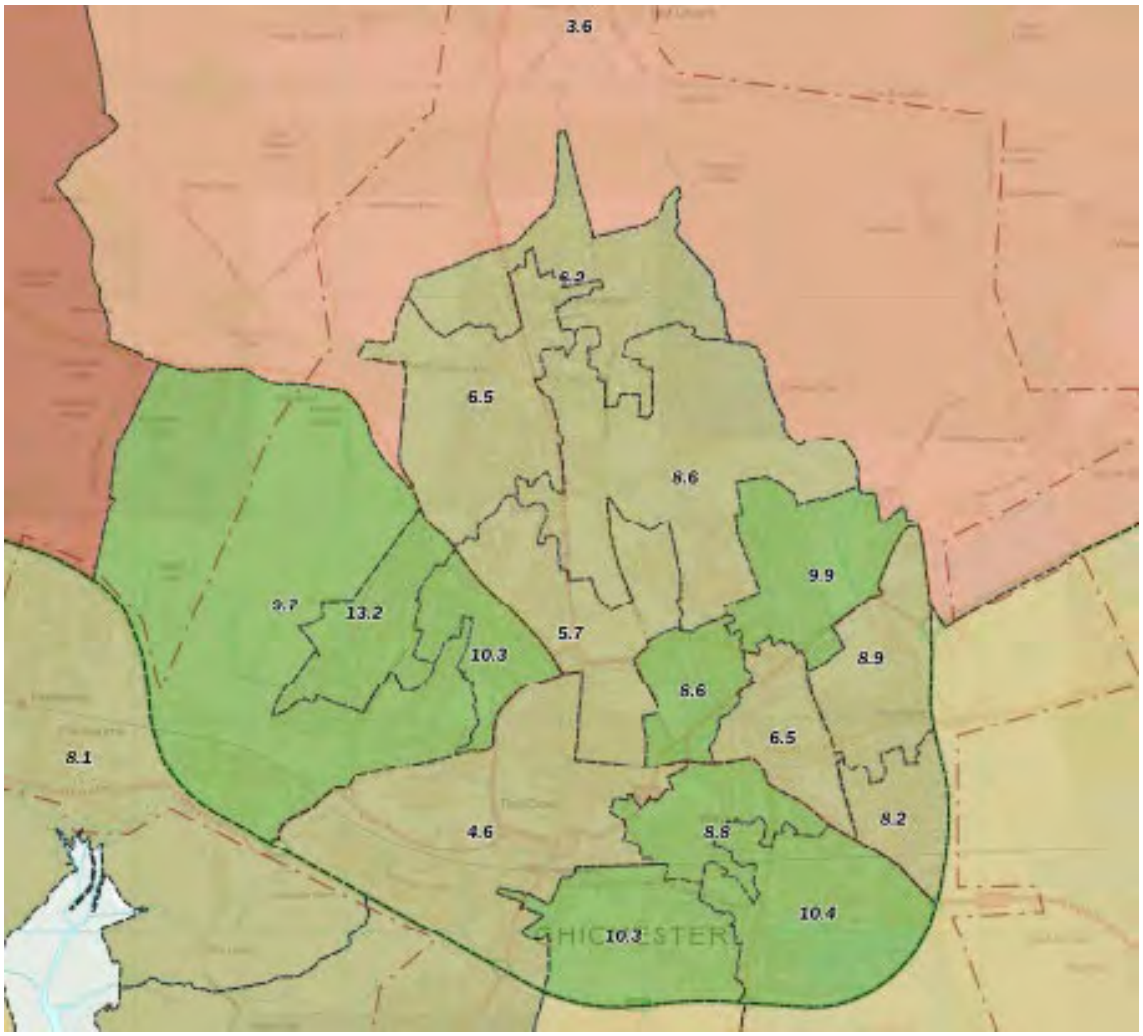
Table 2: Cycling & walking levels, 2011 census (NB ward boundaries at the time of the 2011 census)

Ward	Cycling	Walking
Chichester East	8.64%	28.72%
Chichester North	6.94%	22.64%
Chichester South	8.59%	29.41%
Chichester West	11.07%	22.70%
Donnington	8.59%	12.32%
Fishbourne	8.13%	6.48%
Lavant	3.59%	6.09%
North Mundham	4.74%	6.76%

The Department for Transport developed the Propensity to Cycle Tool (PCT) as part of its Local Cycling & Walking Infrastructure Plan (LCWIP) guidance. While it is designed to show how cycling might increase under different scenarios (this will be used later in the LCWIP), it can also be used to show data from the census

Plan 4 below shows 2011 census cycling to work levels in Lower Super Output Areas (LSOA) in the LCWIP area. LSOAs are used by government to represent geographic areas with equal population levels, giving a clearer understanding than wards. The higher cycling levels in Chichester City can be seen in more detail when plotted as LSOAs.

Plan 4: Cycling to work in and around the LCWIP area

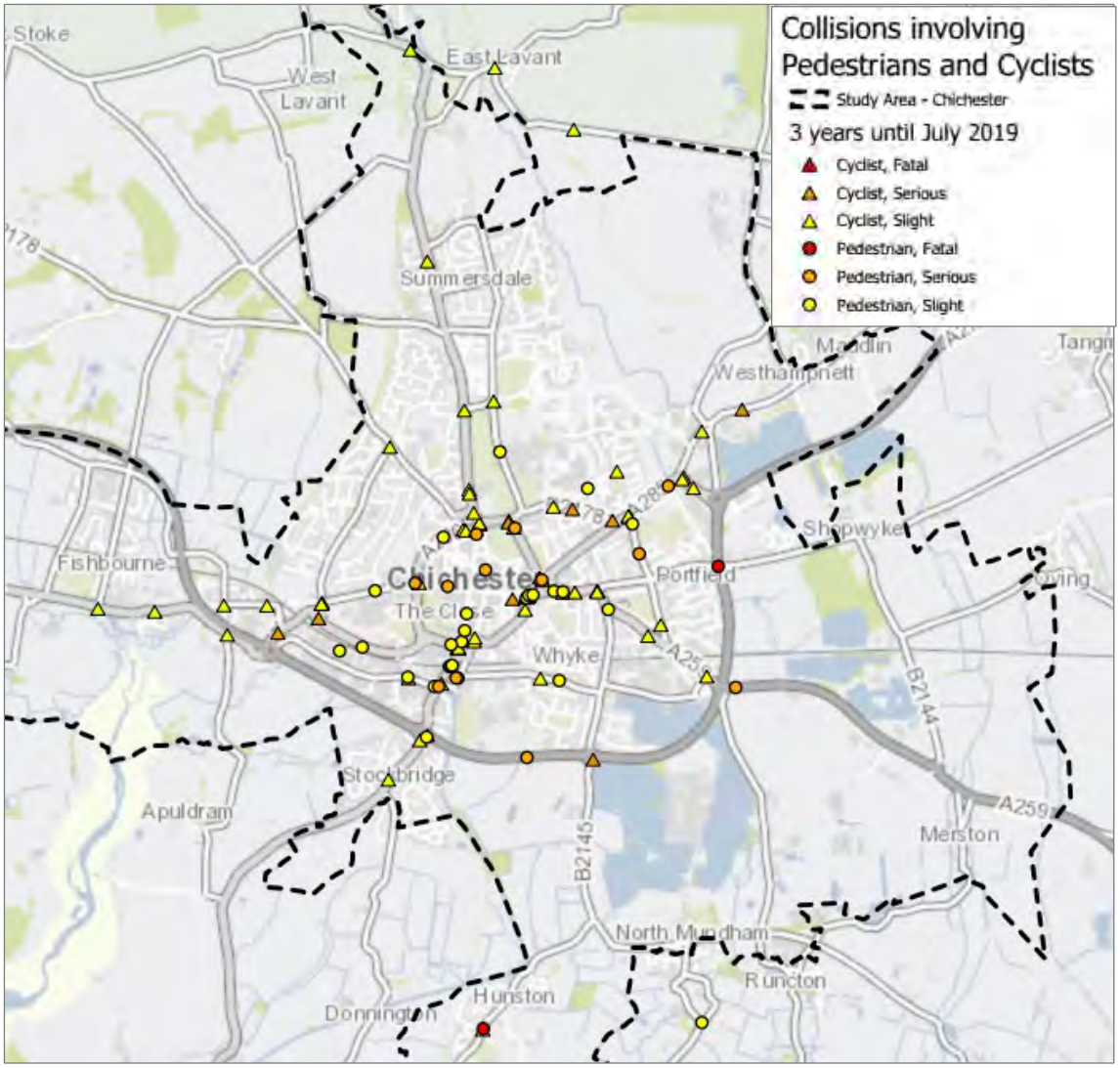


Collision data

Figures for collisions and casualties give an indication of the level of risk to people cycling and walking in the LCWIP area. However, it is important to note that the most severe injuries (commonly described as Killed or Seriously Injured – KSI) are thankfully rare, and are usually not a statistically significant way to show which locations are the most hazardous. While slight injuries are more common, a large proportion of these are often not notified to police.

Plan 5 below shows the distribution of collisions of varying severity across the LCWIP area. It can clearly be seen that in the main most injuries were incurred at main roads in the area. There were notable clusters around the Chichester ring road at the Northgate, Hornet and Southgate gyratory systems.

Plan 5: Cycling and walking collisions in the LCWIP area, 2016-2019


Collisions involving Pedestrians and Cyclists
Study Area - Chichester
3 years until July 2019
Cyclist, Fatal
Cyclist, Serious
Cyclist, Slight
Pedestrian, Fatal
Pedestrian, Serious
Pedestrian, Slight
Stoke
West Lavant
East Lavant
Summersdale
Fishbourne
Chichester
The Close
Whyke
Portfield
Apuldram
Stockbridge
B2145
B2144
A259
Merston
North Mundham
Runcton
Hunston
Donnington

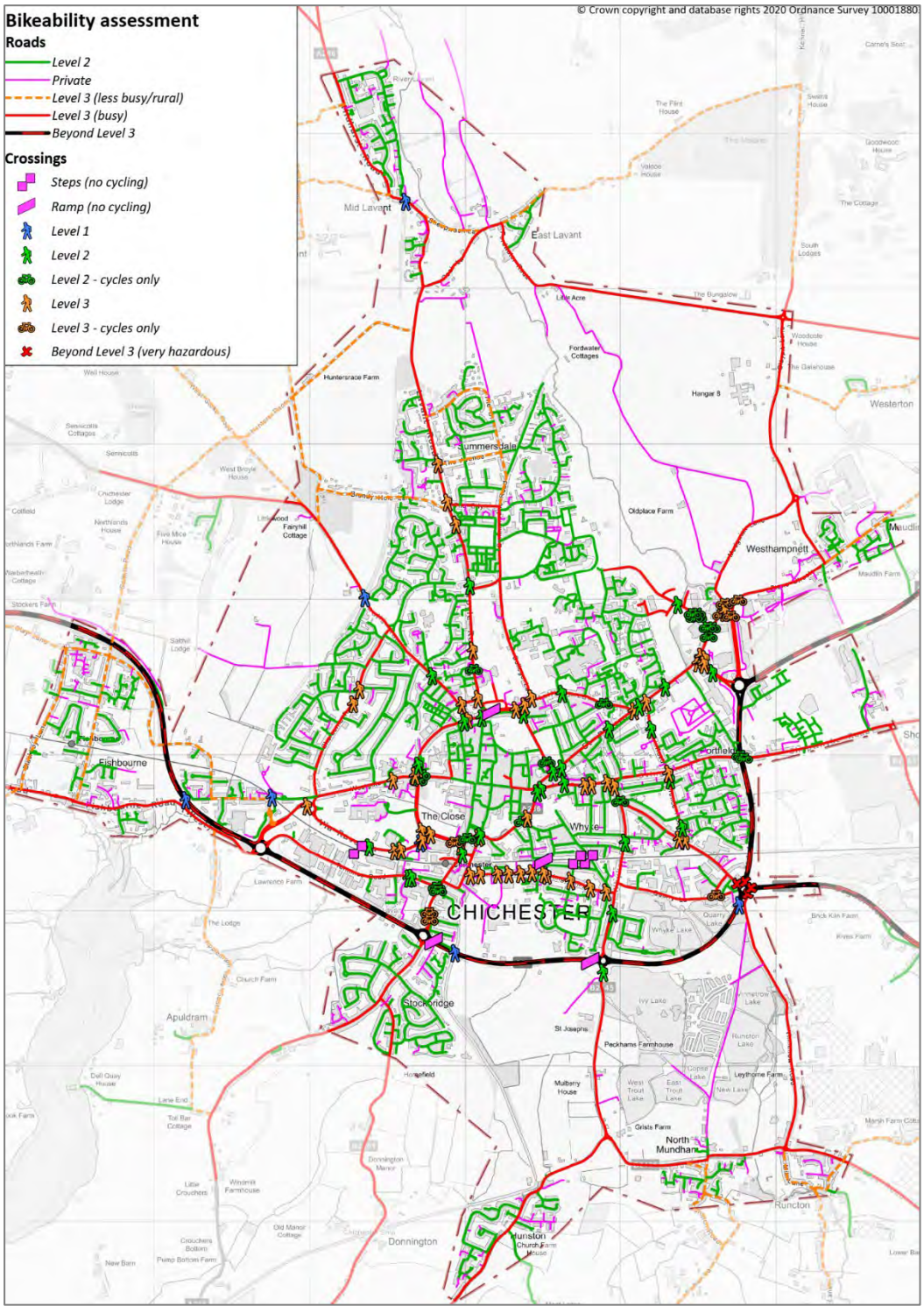
2.4 Provision for cycling & walking in Chichester

To assess how safe and convenient it is to cycle around Chichester, a desk-based study was carried out to assess the level of cycling skills needed to use the highway network. This was followed up by site visits to investigate crossing points on the network.

The process was based on Transport Initiatives' Cycle Skills Network Audit, scaled back for speed and cost-effectiveness (omitting an area-wide assessment of paths and cycle tracks).

Plan 6 below shows the whole LCWIP area, while Plan 7 shows the central area.

Plan 6: Bikeability assessment of roads and crossings in the LCWIP area



Plan 7: Bikeability assessment of roads and crossings in the central LCWIP area

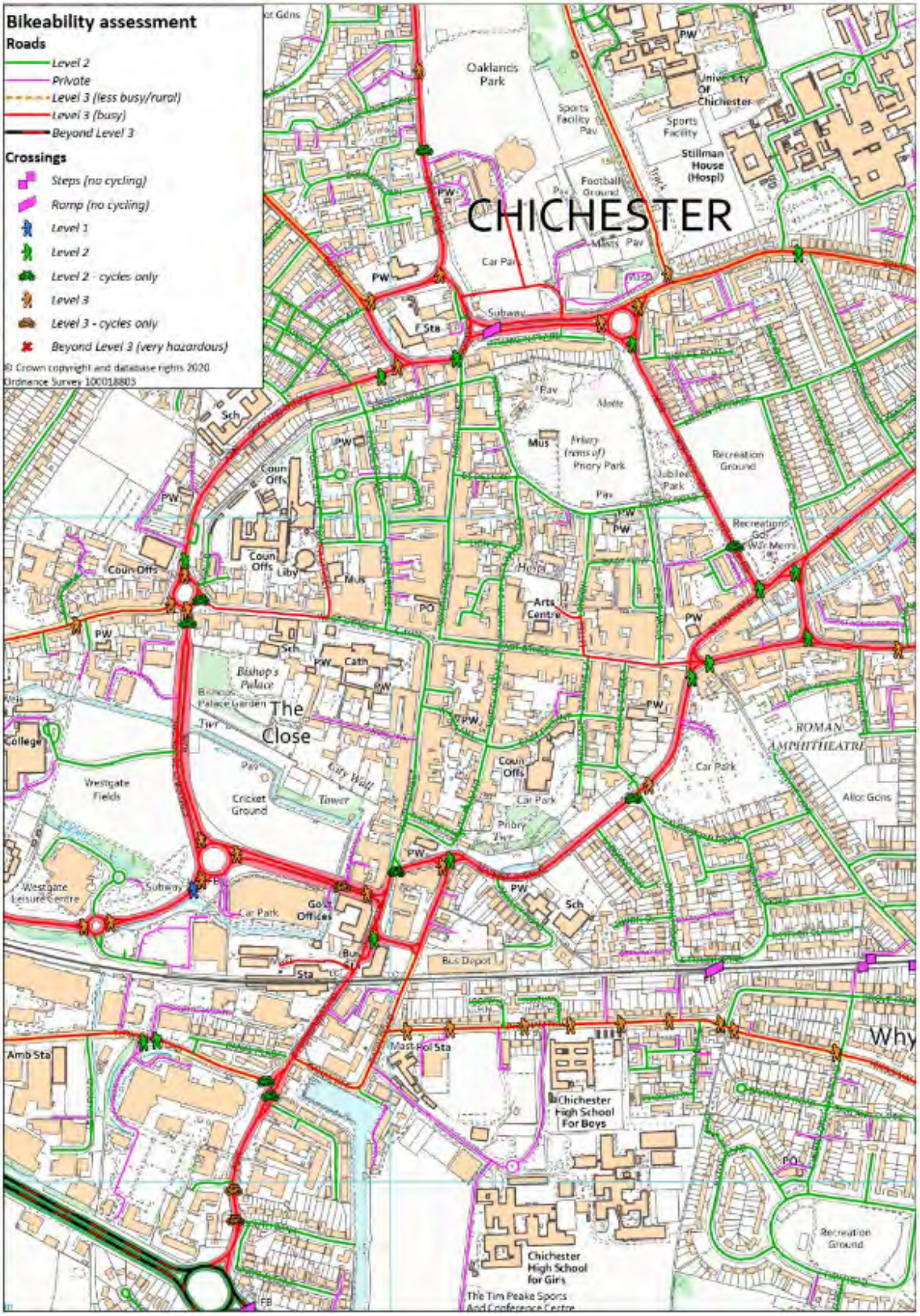


Table 3 below explains the levels used in these plans.

Table 3: Bikeability assessment audit levels

Level	Type	Description
Level 2	Road	Residential or other quiet street, suitable for most people cycling including older children (i.e. with skills equivalent to Level 2 Bikeability)
Private	Road	Private street – access may be allowed at some times (generally similar to Level 2)
Level 3 (less busy/ rural)	Road	Busier road in urban areas (e.g. rat run) or minor road in rural areas with lower traffic but high speeds, generally only suitable for less risk averse cyclists
Level 3 (busy)	Road	Busy road only suitable for less risk averse cyclists (i.e. with skills equivalent to Level 3 Bikeability)
Beyond Level 3	Road	Very busy road with fast moving traffic, unsuitable even for experienced cyclists (e.g. A27)
Steps	Crossing	Grade-separated crossing (bridge or subway) with steps
Ramp	Crossing	Grade-separated crossing with ramp but cycling prohibited
Level 1	Crossing	Grade-separated crossing with ramp with cycling allowed
Level 2	Crossing	Higher quality/protected crossing – walking only
Level 2 – cycles	Crossing	Higher quality/protected crossing – walking & cycling (or cycling-only)
Level 2	Crossing	Lower quality/unprotected crossing – walking only
Level 2 – cycles	Crossing	Lower quality/unprotected crossing – walking & cycling (or cycling-only)
Beyond Level 3	Crossing	Hazardous crossing for any user

The audit shows that while there are areas where cycling is relatively safe and convenient, these are generally surrounded by roads that only people who feel confident cycling will be prepared to use. This especially applies to the A286 inner ring-road which restricts cycling (and indeed walking) access between the central area of Chichester and the rest of the city. Road barriers are compounded by other physical features such as the railway.

In the outlying part of the city, and especially the more rural areas, there are little or no alternatives to using unsuitable roads classified as Level 3 or beyond.

Level 3 road (A286 Avenue de Chartres) with sub-standard width cycle track & footway

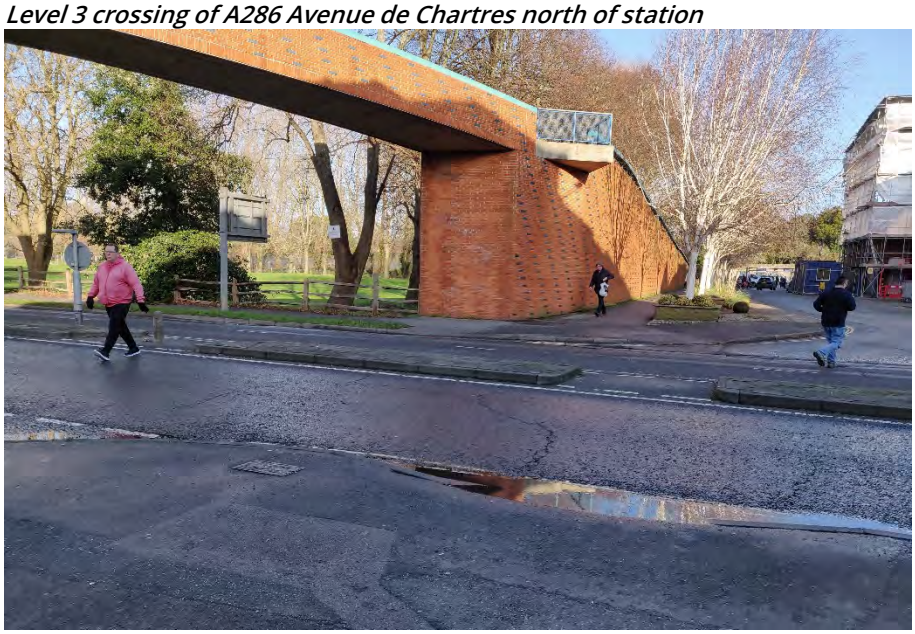
Crossing provision is also very poor. There are a large number of Level 3 crossings, including every crossing on Kingsham Road/Avenue. Apart from the Barnfield Drive/ Westhampnett Road roundabout, there are very few Level 2 crossings which permit cycling.

The crossings of the railway and A27 are particularly poor, with only one grade-separated crossing of the railway and two of the A27 where cycling is allowed (though there are other bridges across the A27 where cycling is prohibited).

Plan 8 below shows Rights of Way and cycle routes. Note these were not audited in detail at this stage as this was done as part of the future route development process. The dotted blue lines include cycle routes which combine both traffic-free and on-road infrastructure.

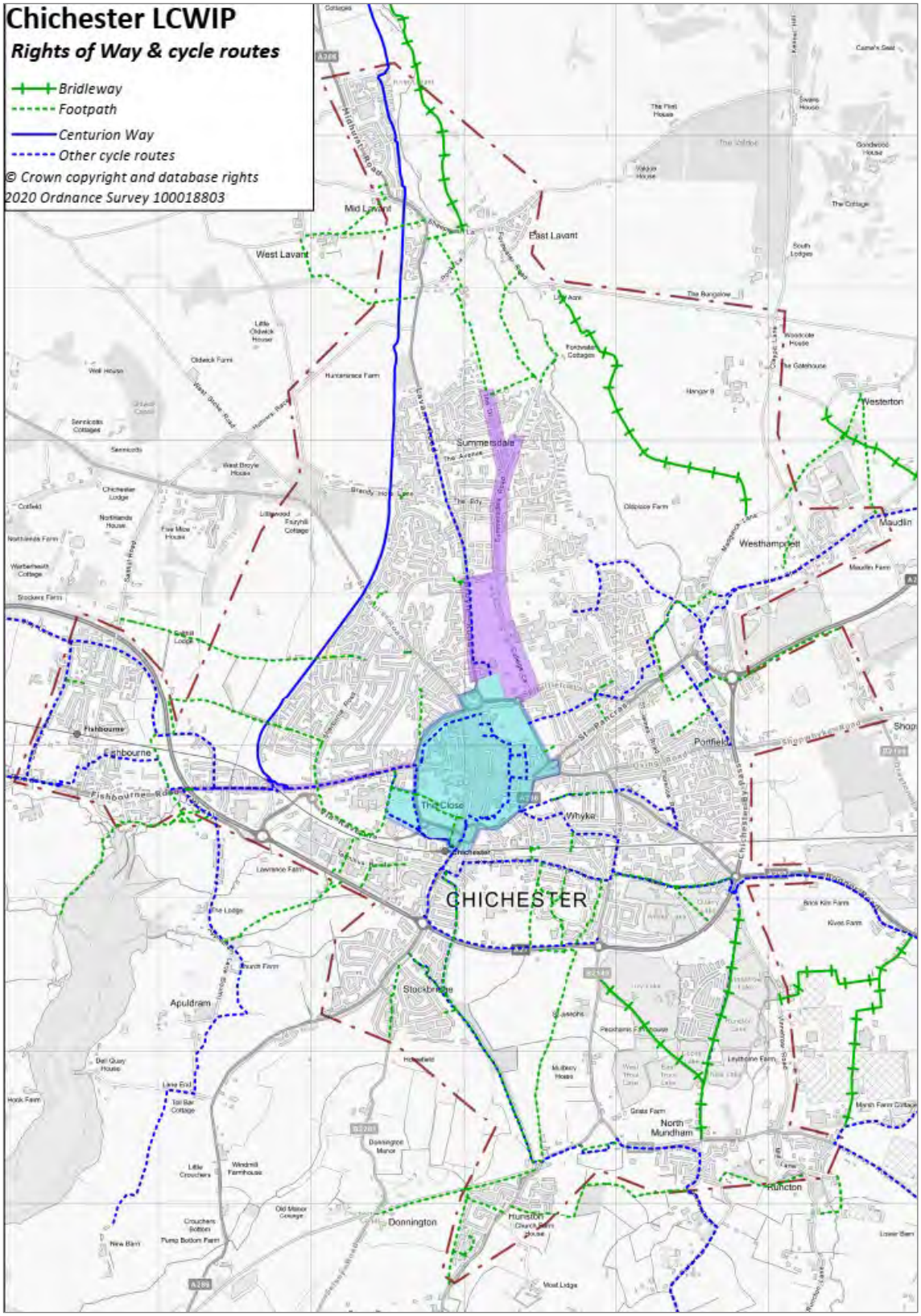
While there are several useful and good quality traffic-free routes for walking and cycling (notably Centurion Way, Saltern's Way and the Chichester Canal towpath), connectivity to these is poor. There are also considerable areas of the city with low standard provision and others with little or no provision, especially in the north of the LCWIP area.

Level 3 crossing of A286 Avenue de Chartres north of station



Level 3 crossing of B2145 Lagness Road at Foxbridge Drive, Hunston (NCN route)

Plan 8: Rights of Way and cycle routes in LCWIP area (also showing core walking zone & key walking routes)

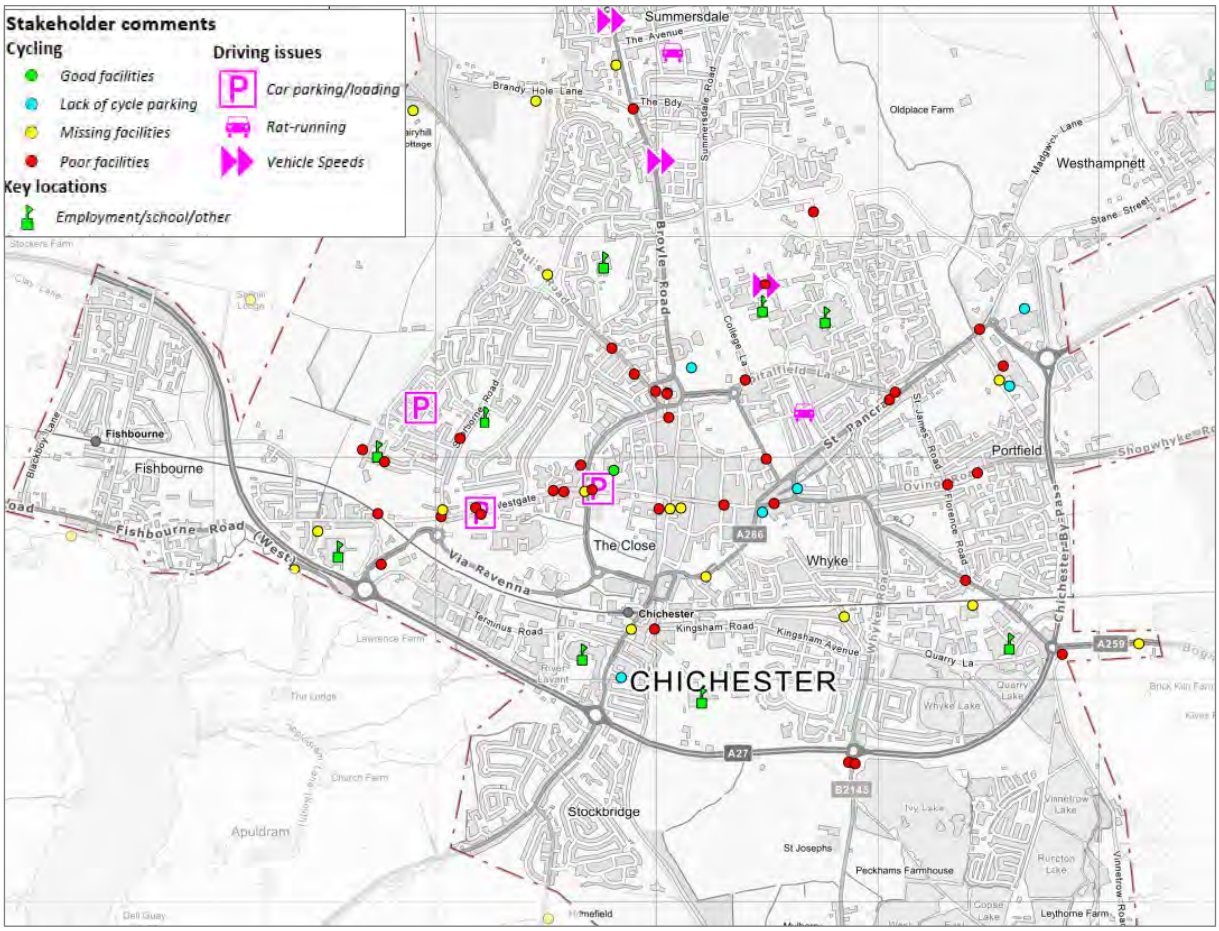


2.5 Stakeholder input

As well as data based on existing travel patterns and the road and path network, the views of key stakeholders are important. These can help to reveal areas where there are concerns or where improvements might be most beneficial.

A stakeholder workshop was held in July 2019 to gather information on the key issues. Plan 9 shows the outputs from the workshop. Detailed comments (provided separately) were gathered from participants and used later in the LCWIP process to help refine walking and cycling proposals.

Plan 9: Stakeholder comments



Stakeholder workshop

3. Potential for cycling & walking

3.1 Introduction

Developing and planning a potential cycle network can be a complex process, but essentially relies on building up options that deliver supressed demand while being realistic and deliverable. The stages to be followed are:

- Analysing existing and potential trips, based on demand
- Identifying corridors to deliver the demand-led trips
- Prioritising corridors for further assessment
- Developing priority routes in more detail and identifying improvements

Planning strategic improvements for walking is somewhat different, since in most cases the core infrastructure (footways) are already present. Furthermore, walking is generally more evenly distributed than cycling. Hence, the stages to be followed are:

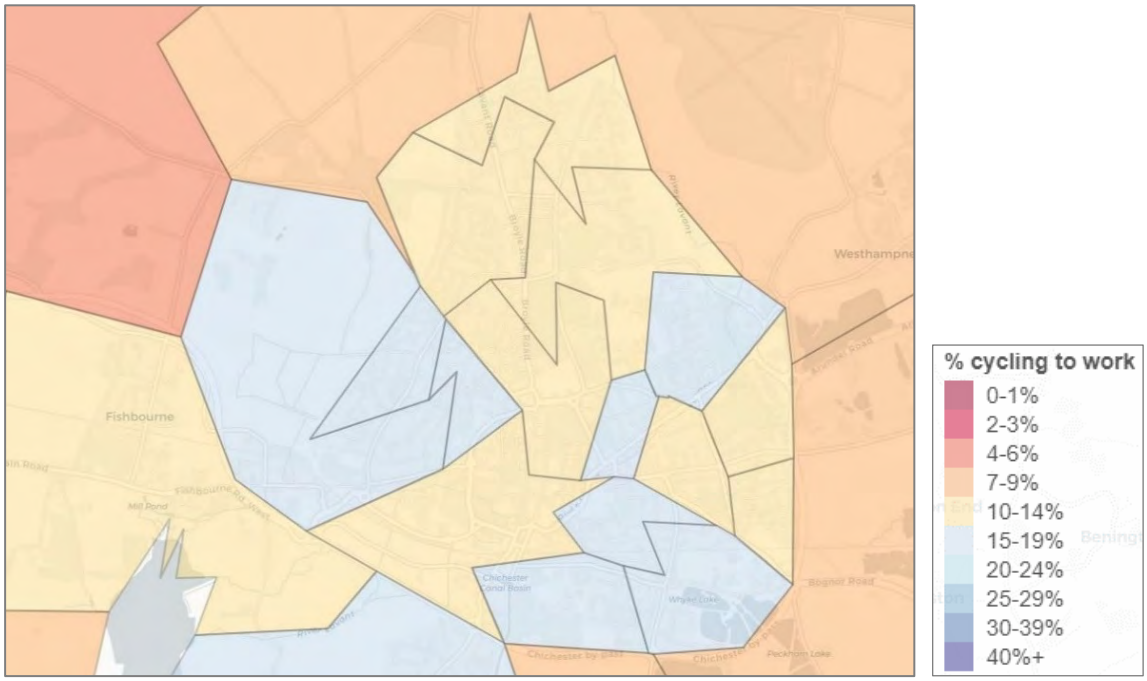
- Defining Core Walking Zone(s) and key walking routes
- Auditing Core Walking Zone(s) and key walking routes
- Identifying improvements

3.2 Potential for cycling

By understanding and analysing data on actual cycle trips, the future network can be planned to serve the highest number of trips. The DfT's Propensity to Cycle Tool (PCT) shows the increase in cycling, based on a range of scenarios. The PCT extrapolates from current cycling patterns based on cycle trip distances and hilliness. This can then be used to show where people might cycle if it was safe and convenient.

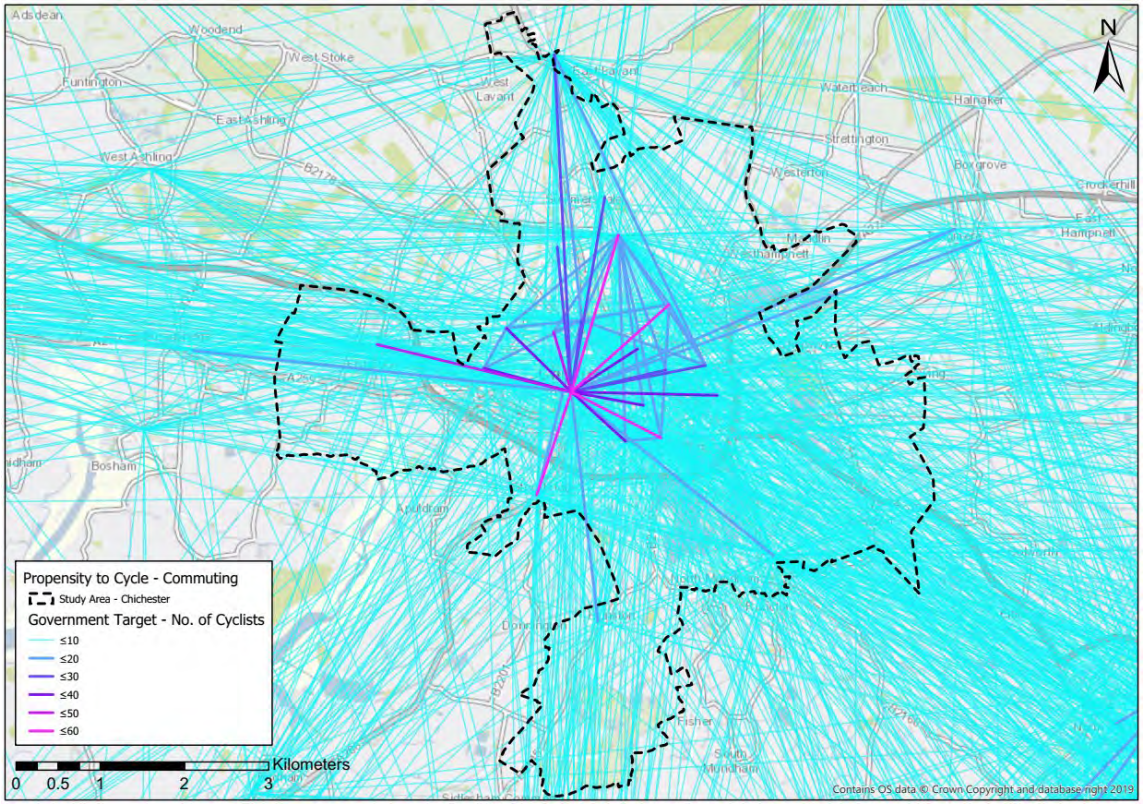
For the Chichester LCWIP, the "Government Target – near market" scenario was used. This shows the increase based on an overall national doubling of cycling, concentrated where the types of trips and socio-demographic profile both support cycling. While cycling levels would increase across the LCWIP area, the largest increases are in the west and south.

Plan 10: PCT analysis using Government Target – near market scenario

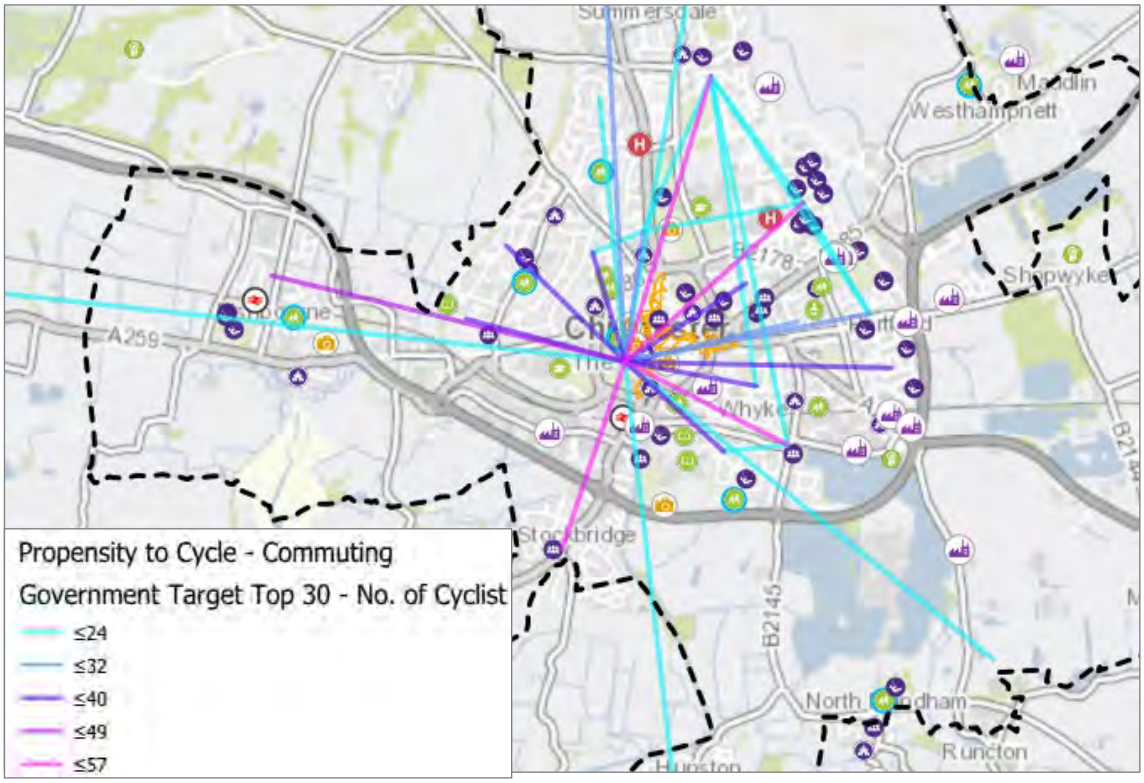


These increases can be examined in more detail to show the origins and destinations of trips. Plan 10 shows the overall level in each LSOA area. Plan 11 shows idealised straight-line trips between all LSOA pairs, with the most significant trips highlighted. This shows that the highest potential routes are almost all radial (into/out of the centre of Chichester).

Plan 11: PCT analysis of origin-destination trips under Government Target – near market scenario



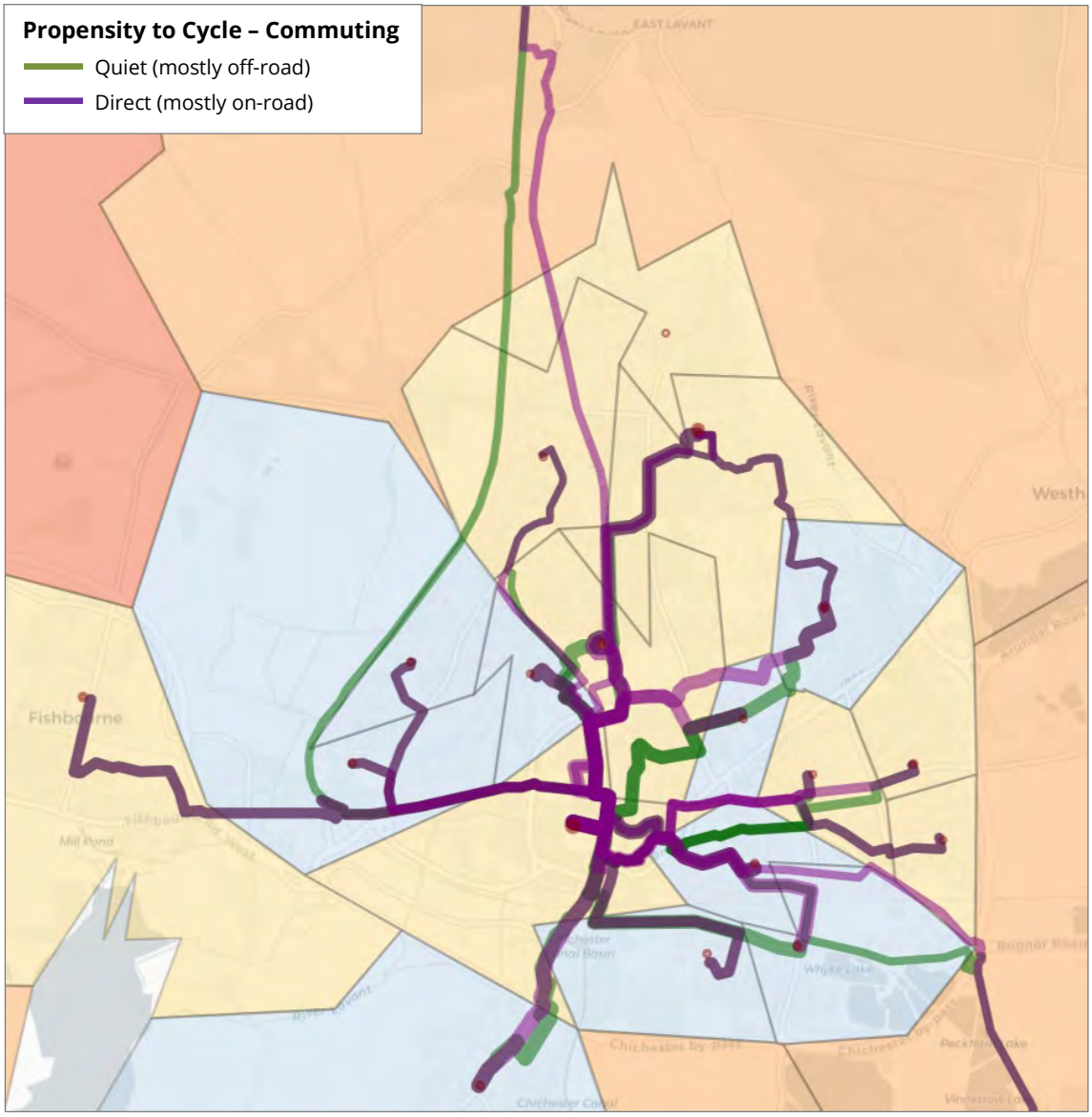
Plan12: PCT analysis of top 30 origin-destination trips under Government Target – near market scenario



The PCT allows these trip corridors to be plotted against the actual route network, rather than idealised straight lines. Plan 13 shows the same top 30 potential trip alignments, using the road and path layout in the LCWIP area. Note that green lines show quiet (generally off-road) trips while purple lines reflect more direct trips along the road network. The thickness of the line shows the level of potential trips.

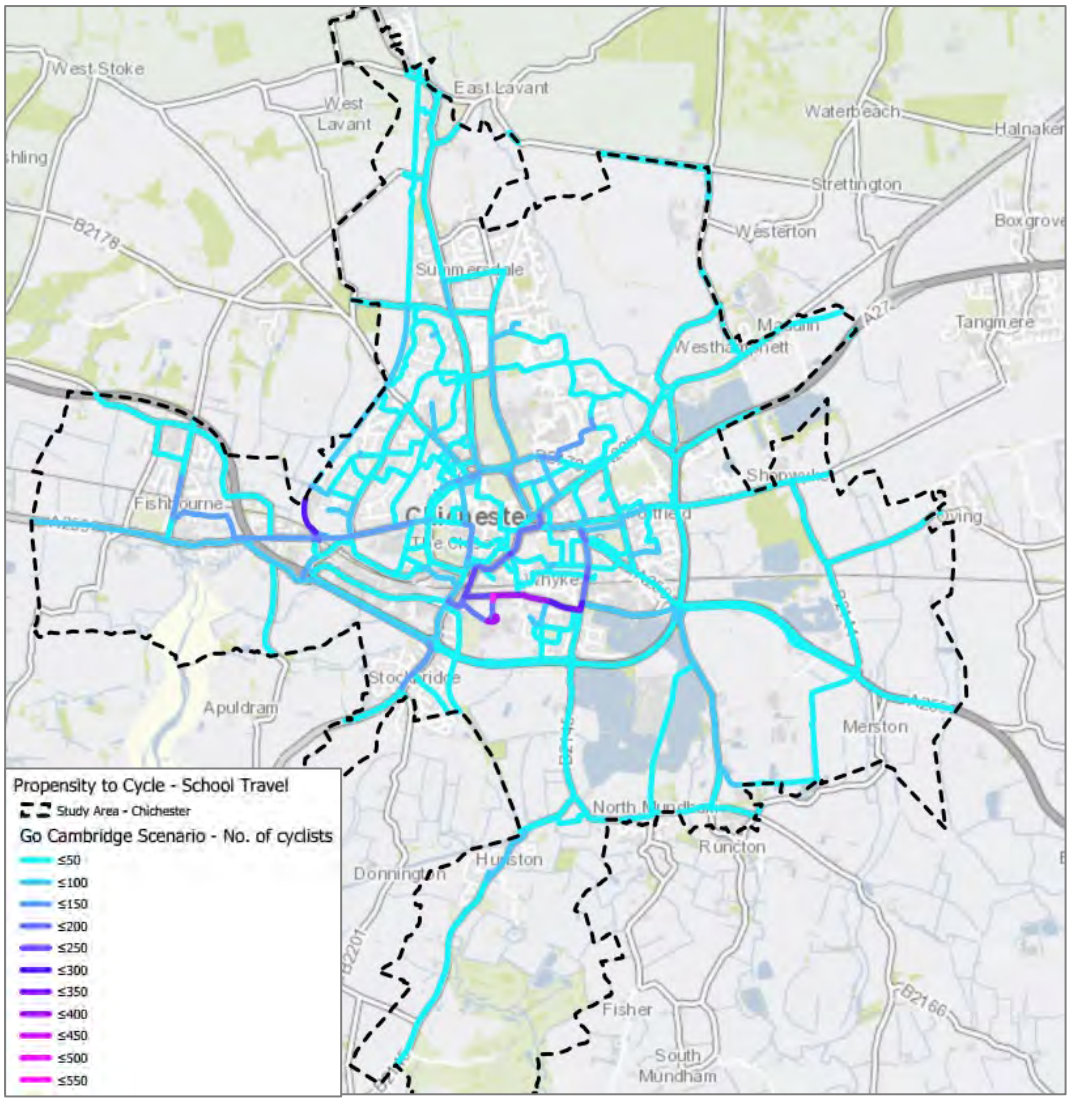
It is important to appreciate that these are potential trips assuming improvements for cycling. Hence some trips are shown along roads which most people would consider to be currently unsuitable for cycling.

Plan 13: PCT analysis of top 30 potential trip alignments under Government Target – near market scenario



While the PCT was initially designed only to assess data on cycling to work, it has recently been revised to include cycling to school, with different scenarios. Plan 14 shows potential cycle journeys under the "Go Cambridge" scenario, in which the pattern of pupils travelling to school would be similar to that in Cambridge.

Plan 14: PCT analysis of potential cycle to school trip under "Go Cambridge" scenario



Issues with cycle demand analysis

It is important to note that the PCT is based on the 2011 census and hence does not take into account any changes in either residential or workforce population since that date. It also only uses travel to work or school data.

Furthermore, the modelling does not allow for future developments, such as those planned at White House Farm and Tangmere. As these are highly significant in the study area, these need to be addressed in terms of the potential for cycling based on the level of population increase. A realistic target would be for 15% of trips to be made by cycle, matching the highest level in the Government Target scenario shown above.

Where there is no evidence of demand, the development of routes along other desire lines identified in policies and plans may still be justified in terms of leisure and recreation. Using this as the basis for a route will lead to a different approach to alignments and type of infrastructure.

Initial suggestions for route corridors

Based on the analysis of the road and path network, a set of possible corridors was developed for further assessment. These were assessed in detail and presented at a second workshop for stakeholders in November 2019. Many detailed comments were received which were used to help refine the proposed routes. Plan 15 below shows the routes, split into four quadrants to reflect the format used at the workshop.

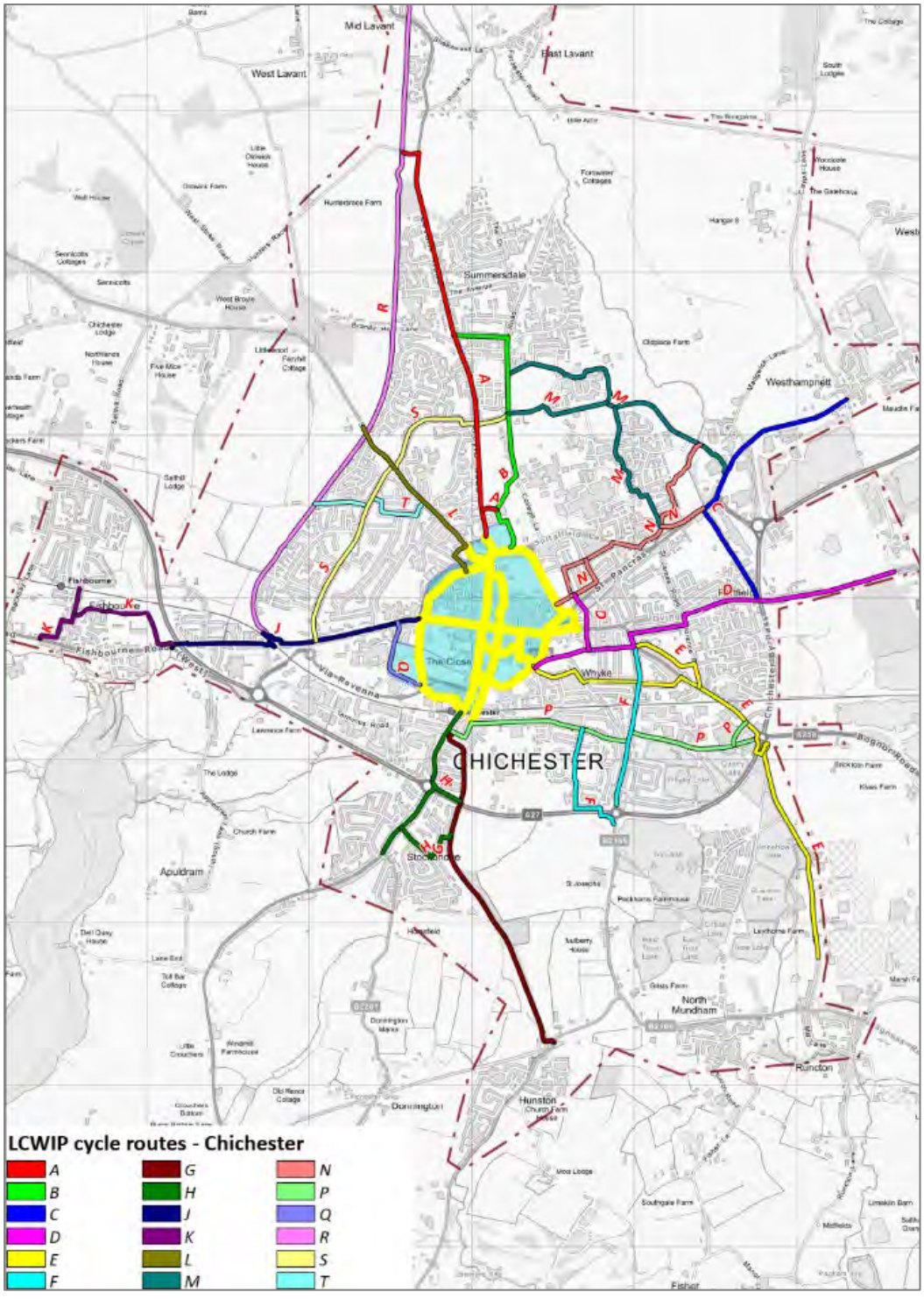
Plan 15: Potential route options (quadrants as used at Stakeholder meeting)

Route network

An initial version of the proposed network was developed taking into account all the factors discussed above. The network was subsequently refined following discussions between the consultants, CDC and WSCC. Routes were split into those where the lead responsibility for promoting the route would be taken by CDC, WSCC or another party (including developers). It was not considered necessary for routes to be prioritised further at this stage.

The initial version of the proposed network is shown in Plan 16, with the final version shown in Plan 19 below.

Plan 16: Initial version of proposed network



All the proposed routes lie outside the core area and terminate at the A286 ring road. Improvements to links within the core area have not been allocated to individual routes since it would be difficult to define specific alignments and most trips will use a number of links.

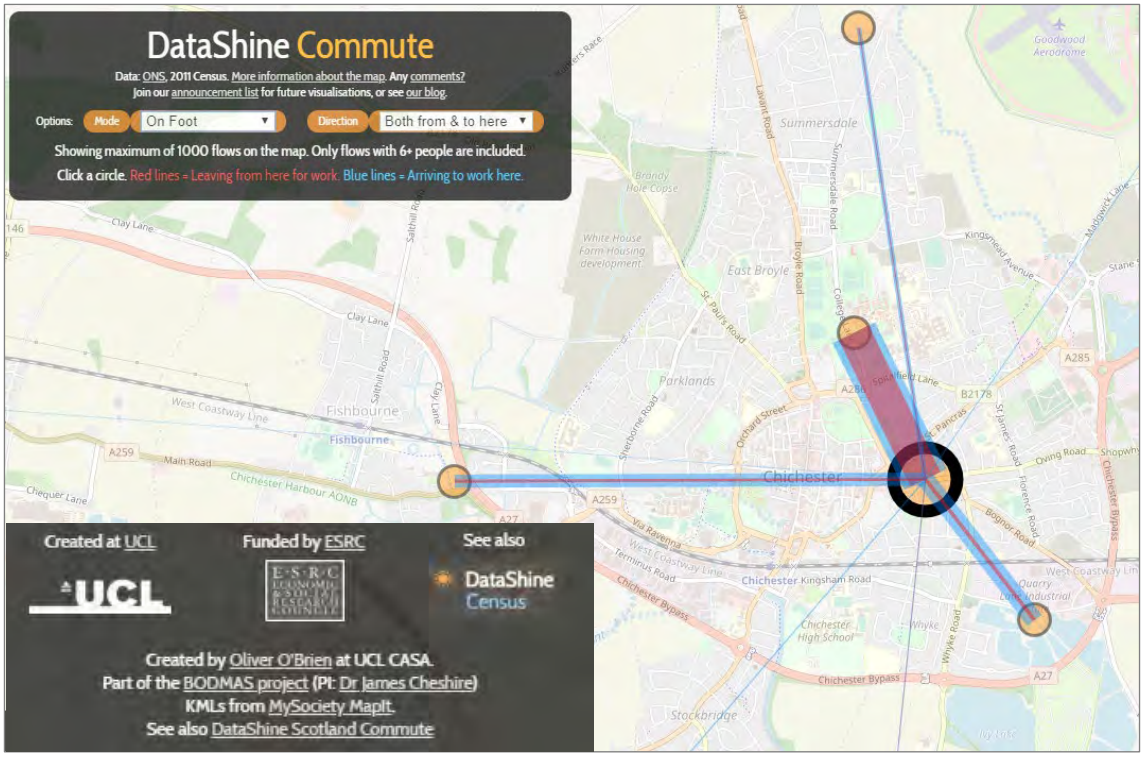
3.2 Potential for walking

There is no version of the PCT which can be used for walking. However, the Core Walking Zone (CWZ) was defined based on the cluster of key destinations in the city centre. The ring road forms a distinct boundary, matching for the most part the historic city walls. Hence this area was defined as the CWZ. This definition was mostly supported by the stakeholder workshop, which recommended extending the CWZ to incorporate three key destinations:

- Chichester station
- Chichester College
- Chichester Festival Theatre

Defining key walking routes is less straightforward and requires detailed analysis of raw census data. A tool which allows this to be done without excessive work is the Datashine portal [4] which provides analysis of data from the 2011 census. Plan 17 shows walking trips between areas of Chichester which establishes shows that the main flows are to the north, south-east and west of the city centre.

Plan 17: Main existing walking flows to/from city centre (using Datashine portal)



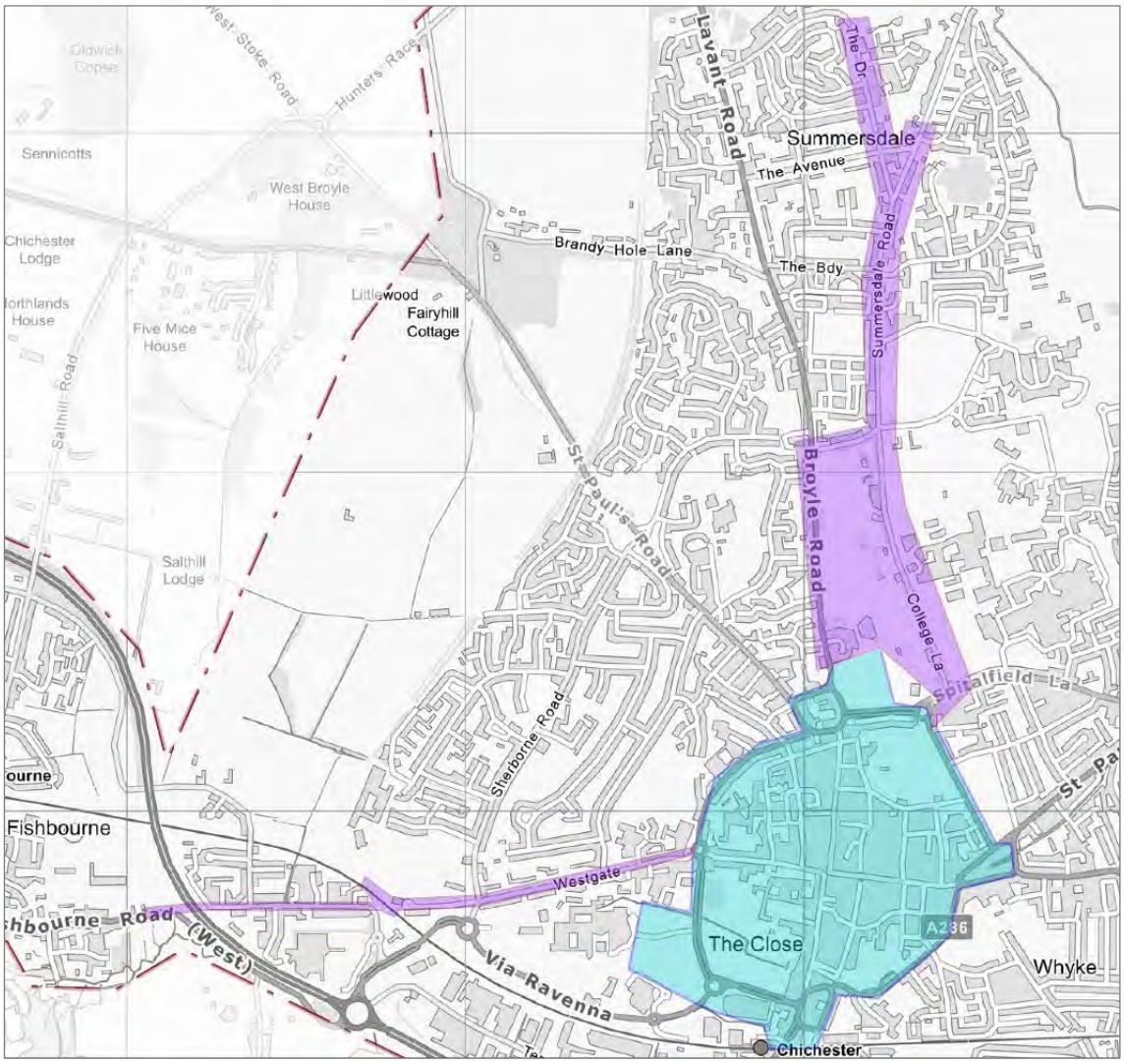
Following discussions with officers, it was agreed that two routes should be assessed in detail:

- North of CWZ – key destinations include Chichester University and St. Richard's Hospital, extended to Summersdale
- West of CWZ – key destinations include Bishop Luffa school, White House Farm development, Centurion Way and links to Fishbourne

[4] https://datashine.org.uk/

Plan 18 shows the Core Walking Zone with the two key walking route corridors.

Plan 18: Core Walking Zone (blue) and key walking route corridors (purple)



Signed walking route to town centre through Northgate car park

4. Cycling assessment & proposals

4.1 Summary

Desk research and site visits were carried out to investigate and assess the existing and potential alignments for the possible route options (both on- and off-road). Plan 18 below shows the final version of the network that was reviewed in more detail.

The review process included the following stages:

- Assessment of existing routes (both roads and paths) to determine if they are fit for purpose, based on the DfT Route Selection Tool (RST)
- Identification of links to fill gaps in the network or replace sub-standard sections
- Identification of routes and route sections to match the alignments revealed by the demand assessment and/or satisfy desire lines identified by stakeholders.

Note that routes where the "route promoter" is WSCC or developers were not assessed in detail for feasibility or cost. This includes routes forming part of the draft county LCWIP.

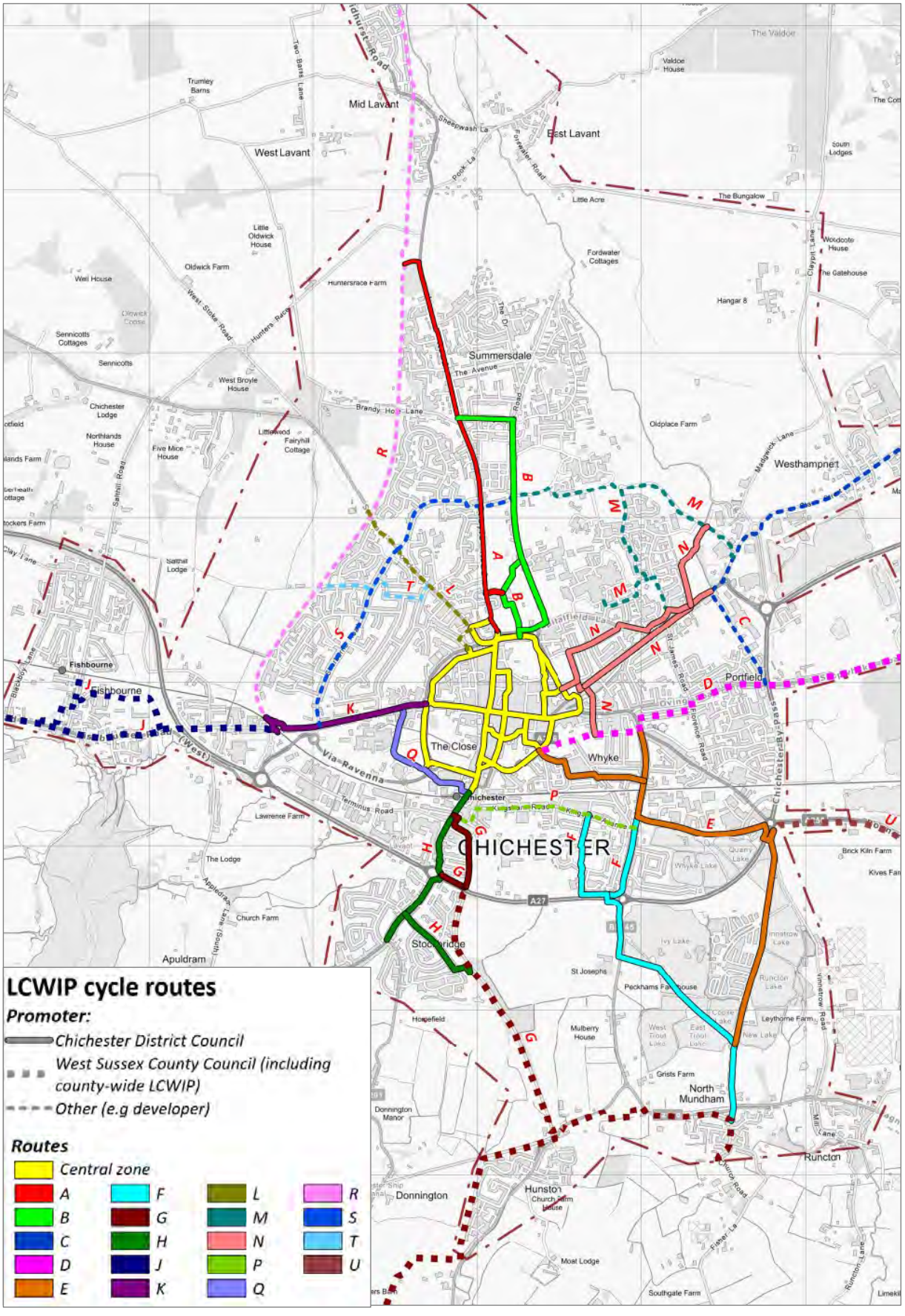
4.2 Routes

As part of the review, the network was divided into 19 individual routes, listed in Table 4. The total length of these routes (including spurs) is 57km, including 7km in the core area.

Table 4: Proposed cycle routes

Route	Name	Promoter	Length (km)	
			Main	Spur(s)
Core area			7.0	
A	Lavant	CDC	2.4	0.1
B	University	CDC	1.8	0.5
C	Westhampnett	Other	2.3	
D	Shopwyke	WSCC	2.5	
E	Vinnetrow	CDC	3.6	
F	North Mundham	CDC	2.5	0.6
G (north)	Chichester Canal	CDC	0.5	0.2
G (south)	Selsey Greenway	WSCC	4.4	1.4
H	Stockbridge	CDC	1.1	0.6
J	ChEmroute	WSCC	2.3	1.2
K	Westgate	Other	1.2	
L	St Paul's	Other	1.2	
M	Graylingwell	Other	1.6	1.3
N	St Pancras	CDC	1.6	1.5
P	Kingsham	Other	1.2	
Q	College	CDC	0.8	
R	Centurion Way	Other	6.8	
S	Sherborne	Other	2.1	
T	Parklands	Other	0.8	
U	Bognor-Chichester	WSCC	2.0	

Plan 19: Final version of proposed network



4.3 Route assessment

As noted above, detailed assessment of the routes focused on those expected to be developed and promoted by CDC: A, B, E, F, G north, H, K, N and Q. While the other routes are also important, these will be promoted and developed by either WSCC or a third party (including developers), or form part of wider plans.

Three routes are included in the draft county LCWIP: G south (Selsey Greenway), J (ChEm-route, being developed by Highways England) and U (Bognor – Chichester).

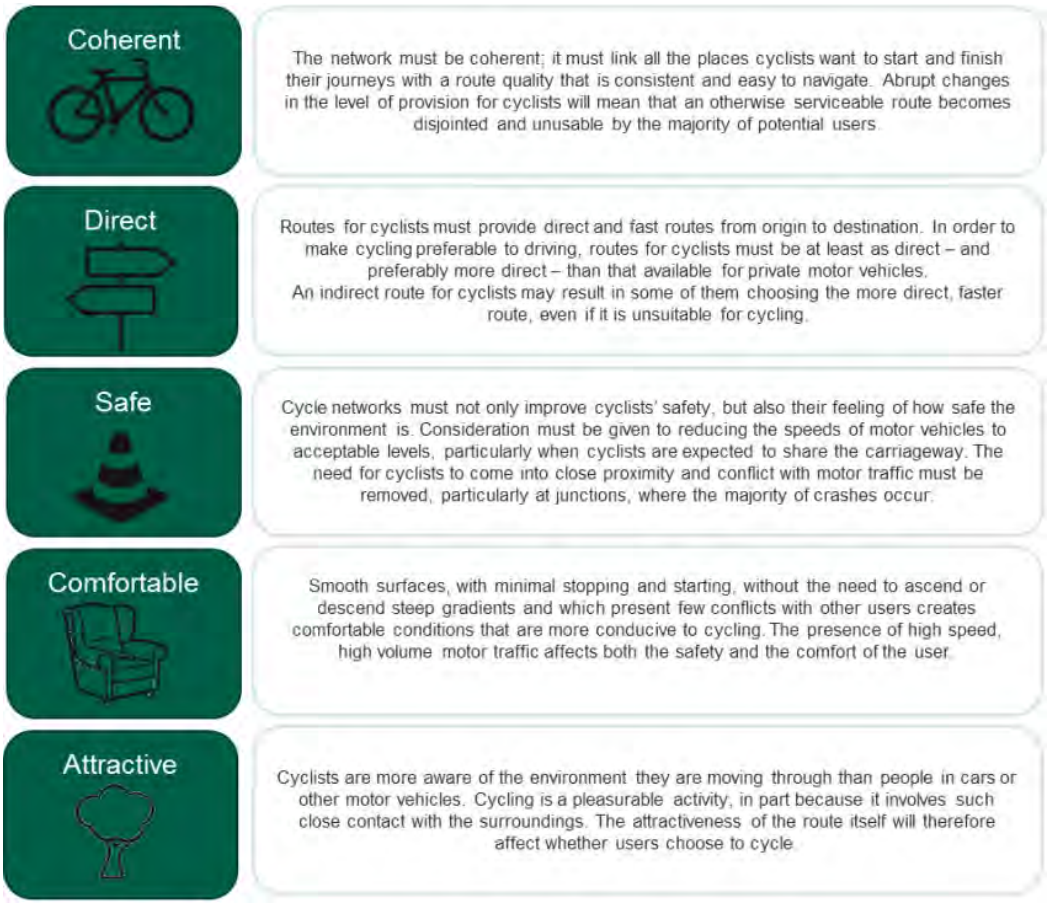
The assessment involved the application of the DfT's RST to the existing route alignment and then to the route following the proposed interventions. This shows the level of improvement that can be achieved.

The RST measures quality of a route using five key criteria: Connectivity, Safety, Directness (deviation from straight line distance), Gradient and Comfort. Routes were divided into sections with similar characteristics and scored against these five criteria, from 0 (poor) to 5 (excellent). Junctions considered to be hazardous to cycling were also identified and recorded (described as 'critical junctions').

The LCWIP technical guidance outlines that the aim is to identify cycle routes which score 3 or above against each of the criteria (or could be improved to score 3 or above), ideally with no critical junctions. Improvements were therefore identified for poor scoring sections. In some cases, alternative routes were required to achieve higher quality.

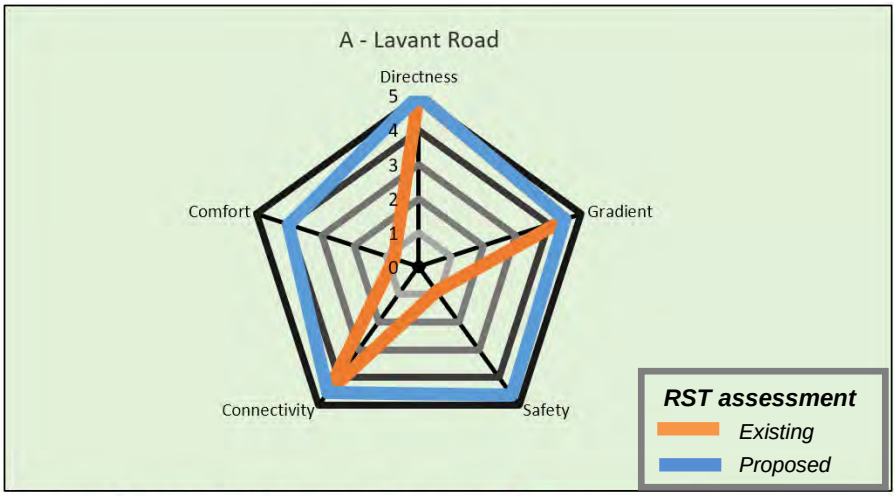
The intention of the improvements is to meet the key design outcomes which are described in the LCWIP guidance.

Key design outcomes, DfT LCWIP guidance



An example of the RST output, for Route A, is given below. Full details are included in Appendix B. The proposed measures for each route are summarised in Table 5 and set out in more detail in Section 6.

Example RST assessment for proposed Route A



Number of Existing Critical Junctions/Crossings	6
Number of Potential Critical Junctions/Crossings	1

Table 5: Summary of measures on routes promoted by CDC

Route	Name	Summary of proposed measures
A	Lavant	New section of shared use path at northern end to connect with recently constructed link to Centurion Way Introduction of new protected cycle lanes along Lavant Road (using space redistributed from unused central hatching)
B	University	Cycle street proposals on College Lane and local junction improvements on the Broadway
E	Vinnetrow	New protected facilities for cycling and upgrades to existing facilities where necessary
F	North Mundham	Removal of through traffic, filtered permeability & improvements in Whyke and by the Free School Improved surface on path to North Mundham
G (north)	Chichester Canal	Improved surfacing and access between canal towpath and A27 Better links at Basin Road
H	Stockbridge	Protected cycle lanes (replacing existing shared use path) with continuous footways at side roads (using space redistributed from unused central hatching) Upgrade of Stockbridge Road/Terminus Road junction to incorporate proposed cycle tracks/lanes with cycle priority facilities on all approaches and pedestrian crossings on all arms
K	Westgate	Major improvements to Orchard Street/Westgate junction Cycle street, cycle lanes/tracks and/or filtered permeability between Orchard Street and Centurion Way
N	St Pancras	Protected cycle lanes on St. Pancras Road with link to hospital
Q	College	Improved crossing of Swieqi Road (Chichester College access road) to maintain cycle and pedestrian priority Improved links at Chichester station

5. Walking assessment & proposals

5.1 Introduction

As noted above, the DfT has set out guidance on how to assess infrastructure for walking using the 'Walking Route Audit Tool' (WRAT). Three areas were identified as being the priority for walking assessments:

- Core Walking Zone
- Northern walking route
- Western walking route

The highway network (including all pavements) was first divided into links and areas for more detailed auditing, using a desk-based approach. Each link or area began and ended where the characteristics of the pedestrian environment changed significantly or were interrupted by a major junction.

Site visits and detailed surveys were then carried out for all of these. The links and areas were assessed using the WRAT process (see Appendix C for the full scoring criteria from the WRAT guidance). This looks at five core categories (divided into 20 sub-categories):

- Attractiveness
- Comfort
- Directness
- Safety
- Coherence

Each of the subcategories was scored on a three point scale:

- 0 - Poor provision
- 1 - Adequate but should be improved if possible
- 2 - Good quality provision

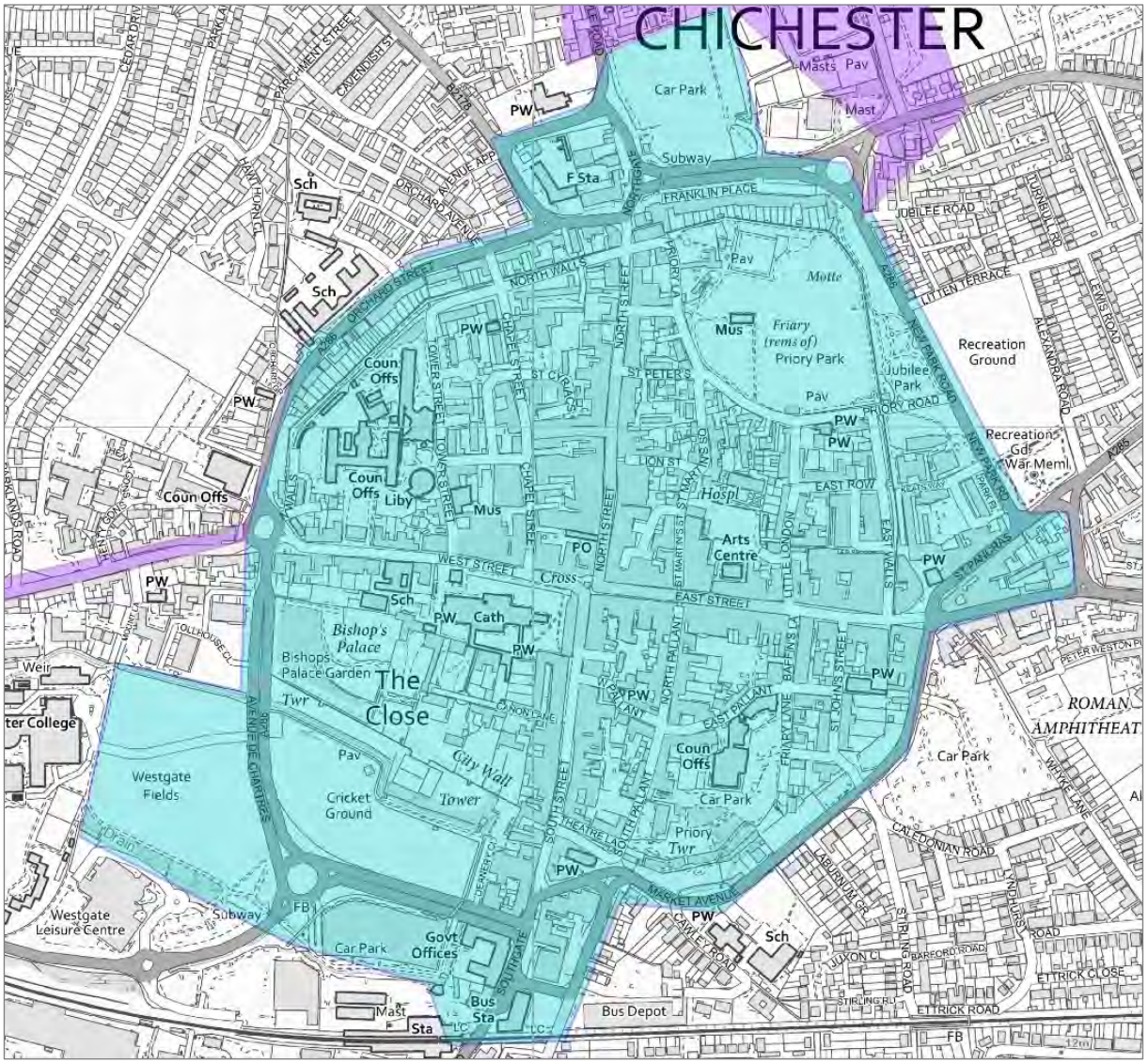
The maximum score possible is 40. The WRAT guidance recommends that any item with a score under 70% (28 out of 40) is considered to be poor. While the guidance does not differentiate between items scoring over 70%, these have been divided into two groups for this LCWIP: Adequate (70%-85%) and Good (over 85%). This will assist development of measures to improve walking by allowing interventions to be prioritised

Example of poor provision (crossing - subcategory 12), South Street

5.2 Core Walking Zone (CWZ)

The CWZ is shown in Plan 20 and covers central Chichester. As noted above, the CWZ was defined initially on the basis of local geography, with a number of changes from feedback from stakeholders as well as observations gathered during the cycling assessment.

Plan 20: Core Walking Zone



Each link was scored and assessed as shown in Plan 21 below. The results of the assessment are shown in Table 6. Appendix C contains full details of the assessment.

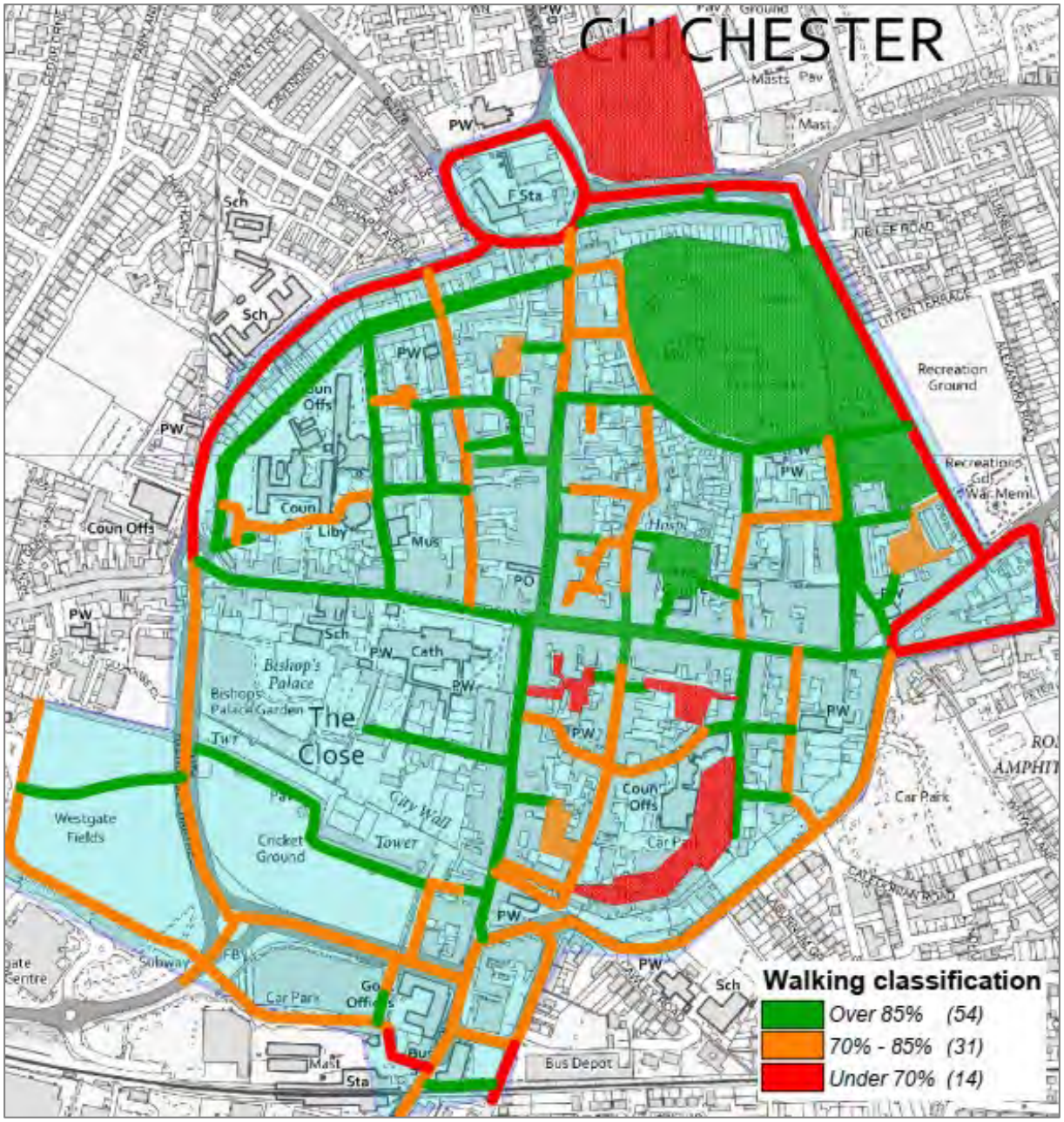
Table 6: Links in CWZ

Classification	No. of links/areas
Good	54
Adequate	31
Poor	14

Most of the links assessed were classified as good or adequate, and hence according to the DfT criteria did not need attention.

Plan 21 shows the links, colour coded using a Red-Amber-Green scale (an alternate version suitable for people with colour-blindness is provided in Appendix C).

Plan 21: Core Walking Zone assessment



The areas with poor provision for walking fall into two main categories:

- Footways on the main roads around the centre (including the Northgate and St. Pancras/Hornet gyratory systems)
- Walking links through car parks, including at Chichester station's northern entrance

Despite the relatively good performance, there are some significant issues to be addressed to make walking in the core area of Chichester attractive and convenient for both residents and visitors. These are set out in more detail in Appendix C.

The density of car parks in and around the city centre makes a clear statement that people arriving by car are welcome. However, once drivers have parked the consistency of their experience on foot (including that of their passengers) was assessed as being generally

unsatisfactory, particularly if they are disabled or have other mobility issues. There is very little dedicated pedestrian provision within car parks and hence after leaving their cars, drivers and passengers are generally expected to share car park roadways with vehicles arriving or leaving. In particular Northgate, Baffins Lane and Cawley Priory/East Pallant car parks were all classified as Poor for people walking.

The poor performance in some areas should be considered in the light of the overall circumstances. Chichester is an historic city with historic streetscapes. Preserving these restricts some of the things which can be done to change existing infrastructure. In the historic core there are many places where narrow pavements result in a zero score, but where pavement widening is not a realistic option.

South Pallant – very narrow footway on one side only

Similarly, many links scored low on fear of crime where paths are not well overlooked, such as those through most parks or along the city walls. These will be fine during daylight hours but less so in darkness (two parks, Priory Park and Bishops Palace Gardens are locked at night, but the rest are open). However, it would not be reasonable to expect that this could or should be changed significantly as this is due to the nature of those locations.

Unavoidably narrow shared path at East Walls

5.3 Key walking routes

Two corridor routes were assessed for walking, heading north and west from the core area:

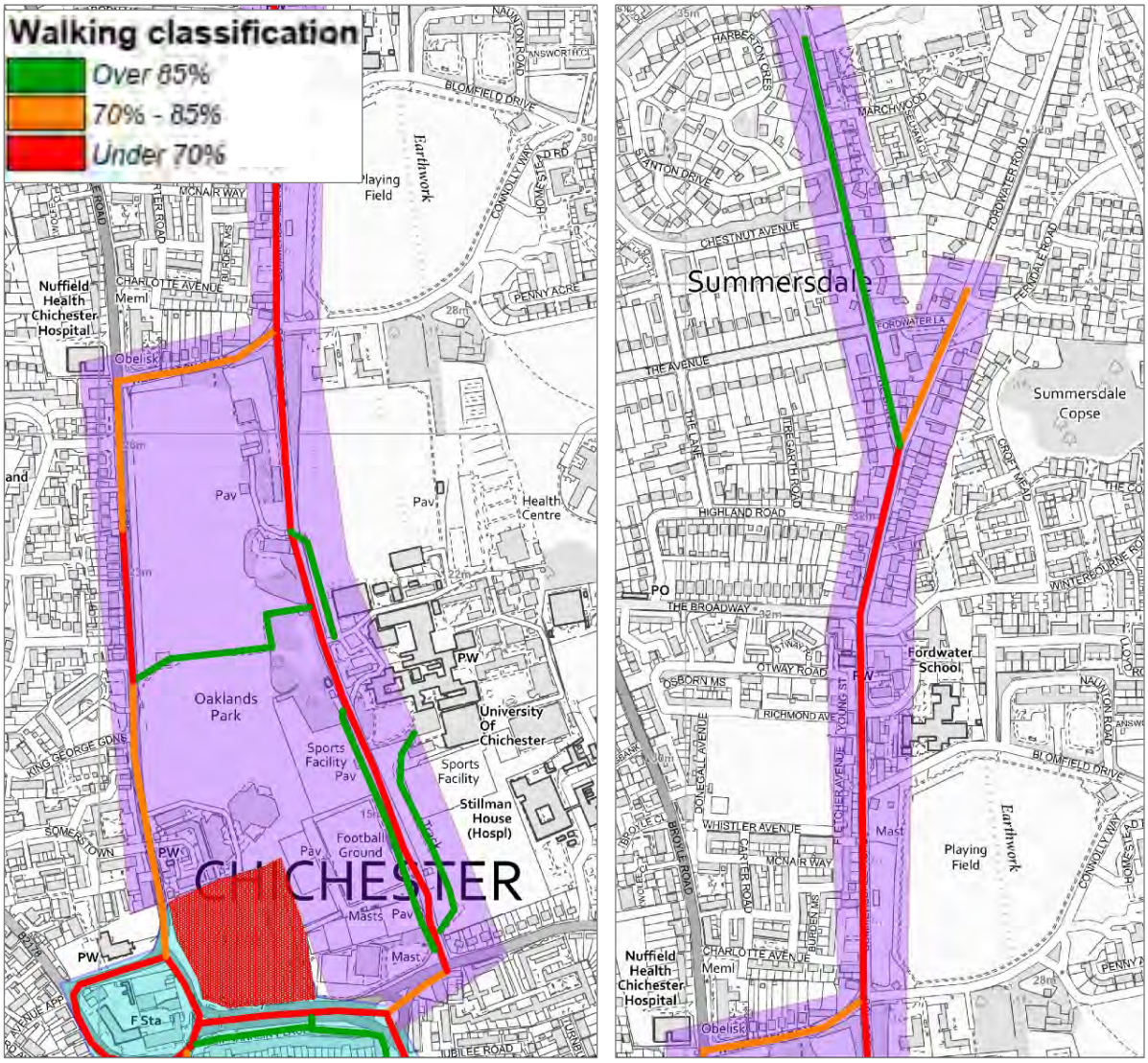
- **Northern route –** about 2km long, from the north of the CWZ at Northgate car park. It includes access to the University along College Lane and then further to the north to residential areas along Summersdale Road. A linking section along Broyle Road and Wellington Road completes this corridor. The path from College Lane across Oaklands Park was also surveyed. It is roughly aligned with proposed cycle route B.
- **Western route –** this runs for 1.7km, from the west of the CWZ along Westgate as far as Fishbourne Road West and the link to Fishbourne Palace. It follows the same alignment as cycle routes J and K.

Northern route

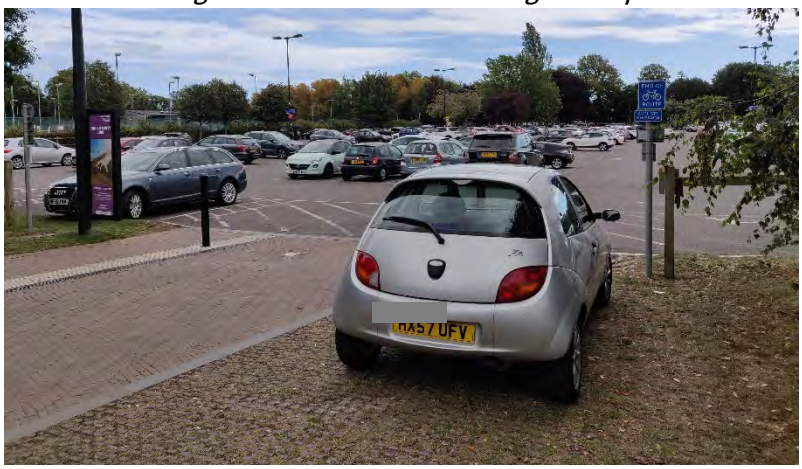
The Northern route was split into 14 separate sections, shown in Plan 22 below. Every section failed on at least one of the twenty assessment criteria.

The lowest performing link was College Lane between the University of Chichester and Oaklands Way, which failed on several issues. This is a key link to the University (and also potentially St Richards Hospital) and hence should be a priority for any future intervention.

Plan 22: Northern walking route assessment



Northern walking route – link between Northgate car park & Chichester Festival Theatre

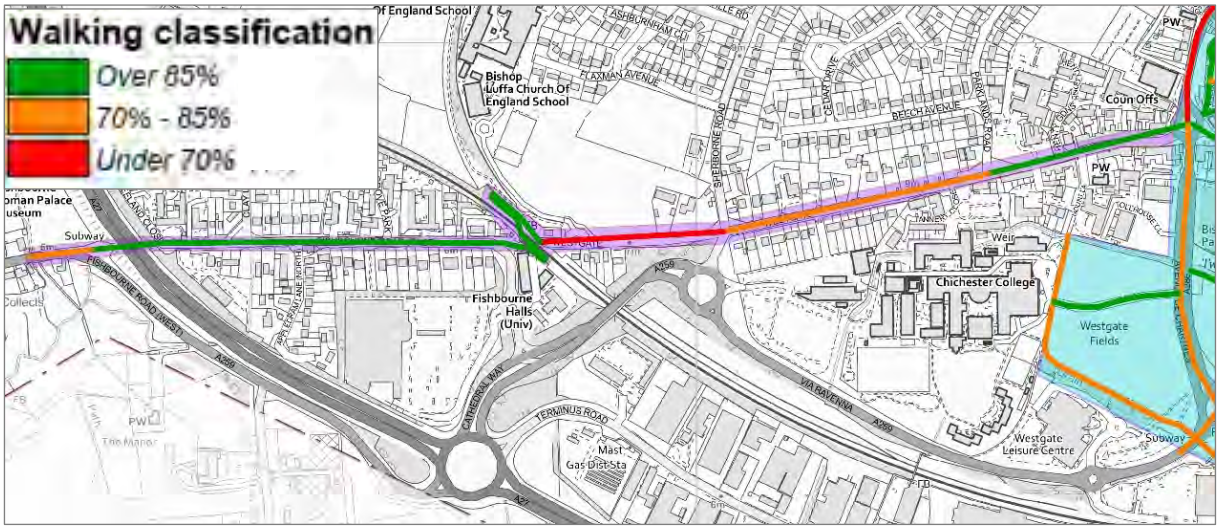


Western route

The western route was divided into eight sections, shown in Plan 23 below. Five of the sections failed on one or more criteria.

The key sections were on Westgate where there was poor crossing provision, inconsistent footway provision, and lack of consistent tactile paving.

Plan 23: Western walking route assessment



Western walking route – pinch points on footway of Westgate at Henty Gardens

6. Detailed proposals

6.1 General

A range of sources were used to develop detailed proposals for cycling and walking. As well as best practice examples from other locations in West Sussex, good practice elsewhere in the UK and indeed abroad was used.

6.1 Proposals for cycling

A variety of inputs was used to develop detailed proposals for the core area, plus the routes outside the core area being promoted by CDC. These included feedback from stakeholders and site visits.

Outside core area

Table 7 sets out the existing situation on key sections of routes outside the core area (see Plan 24 for references).

Table 7: Existing provision on routes

Route	Section	Ref	Existing cycling provision
A	**Lavant Road (Hunters Race - Hunters Way)**	1	Recently constructed link between Centurion Way and Lavant Road, but no provision on road itself
	Lavant Road / Broyle Road (Hunters Way – Churchside	2	Advisory cycle lanes throughout, but with gaps in provision and narrow sections of <1.2m. Space used extensively for wide central hatching & waiting areas for vehicles turning right.
B	**Broadway**	3	No current facilities – quiet residential street
	College Lane	4	No current facilities – quiet street (similar feel to country lane despite being at edge of city centre). Southern end is main access to Chichester University
E	**Vinnetrow Road**	5	Narrow shared use path connecting with public footpath
	A27 bridge	6	Shared use footbridge
	Quarry Lane	7	Limited facilities (short narrow cycle link to bridge)
	Whyke Road (Quarry Lane - Cleveland Road)	8	Signed cycle route with no facilities
	Cleveland Road - Lyndhurst Road	9	Signed cycle route with no facilities but along quiet residential streets
	Caledonian Road	10	Signed cycle route with no facilities but along quiet residential street
	Whyke Road (railway to Bognor Road)	11	No facilities
F	**Whyke Road (A27 to railway)**	12	No facilities
	B2145 to North Mundham	13	Existing shared use path as far as Free School, track south-east to North Mundham
	Sheffield Park Road/Hay Road to Kingsham Road	14	Shared use path across park

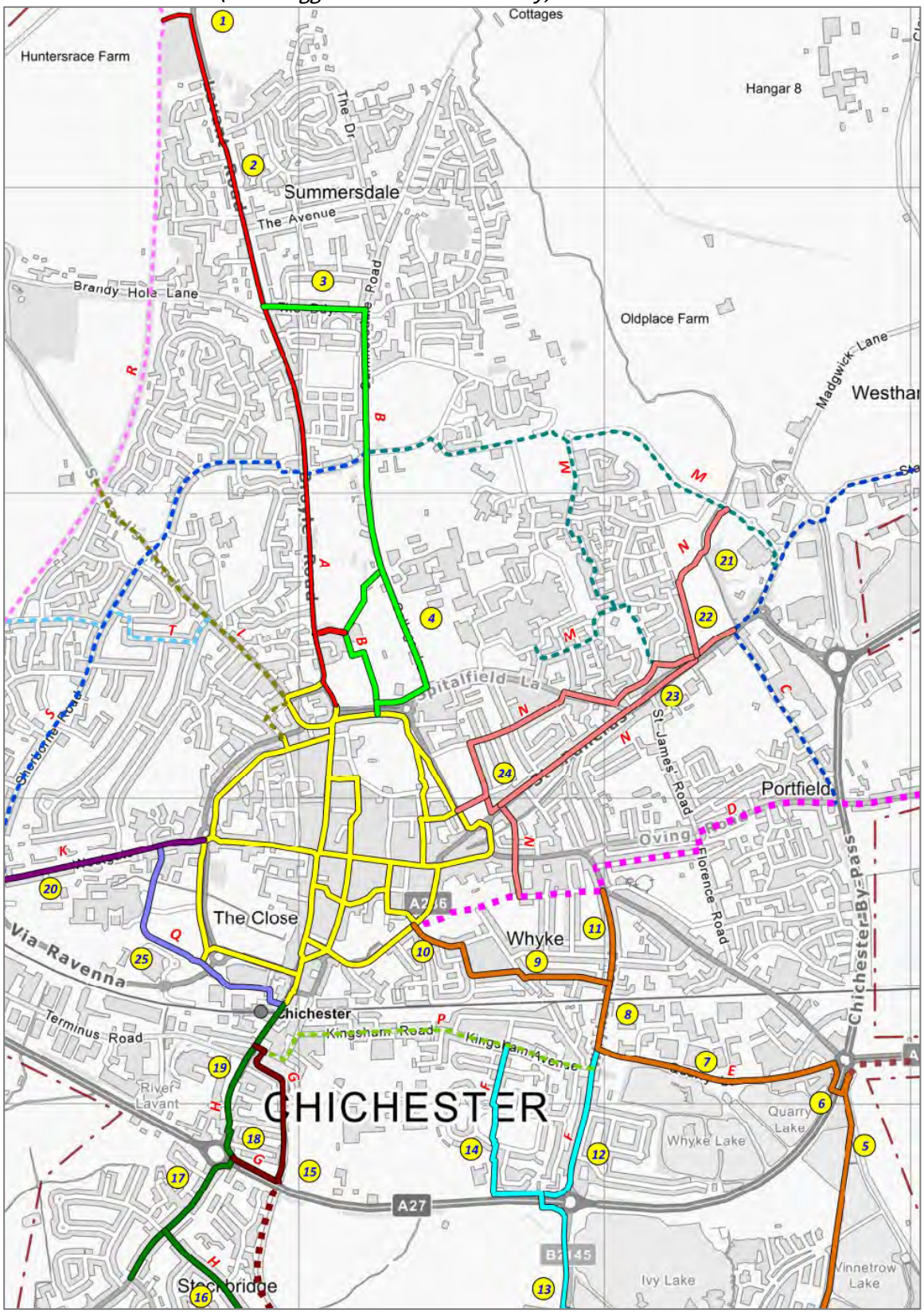
Route	Section	Ref	Existing cycling provision
G	**Chichester Canal (north)**	15	Shared use towpath and path along A27, with steep link (obstructed by barriers)
H	**Grosvenor Road**	16	No facilities but quiet residential street
	Stockbridge Road (Grosvenor Road – A27)	17	No facilities apart from short shared use path on eastern footway
	A27 Bridge / King's Avenue	18	Cycling not allowed on bridge
	Stockbridge Road (King's Avenue – railway)	19	Narrow shared use path on western footway
K	**Westgate**	20	Quiet residential street with no cycle facilities apart from very narrow gaps at road narrowings
N	**River Lavant open space**	21	Shared use path through park
	Swanfield Drive East	22	New link as part of Lidl development
	St. Pancras Road / Westhampnett Road	23	Busy road with no cycle provision
	Cutten Way	24	No facilities but quiet residential street
Q	**Chichester College Park**	25	Shared use facilities from station through College Fields to Westgate

Broyle Road – existing narrow advisory cycle lanes (Route A)

Table 8 summarises the main suggested interventions on routes promoted by CDC, with locations shown in Plan 24.

Larger scale plans of each route with additional details on proposed interventions are included in Appendix B. Plan 25 shows an example of these for Route A.

Plan 24: Route network (main suggested interventions only)



Plan 25: Example of detailed plan of proposed interventions (Route A)

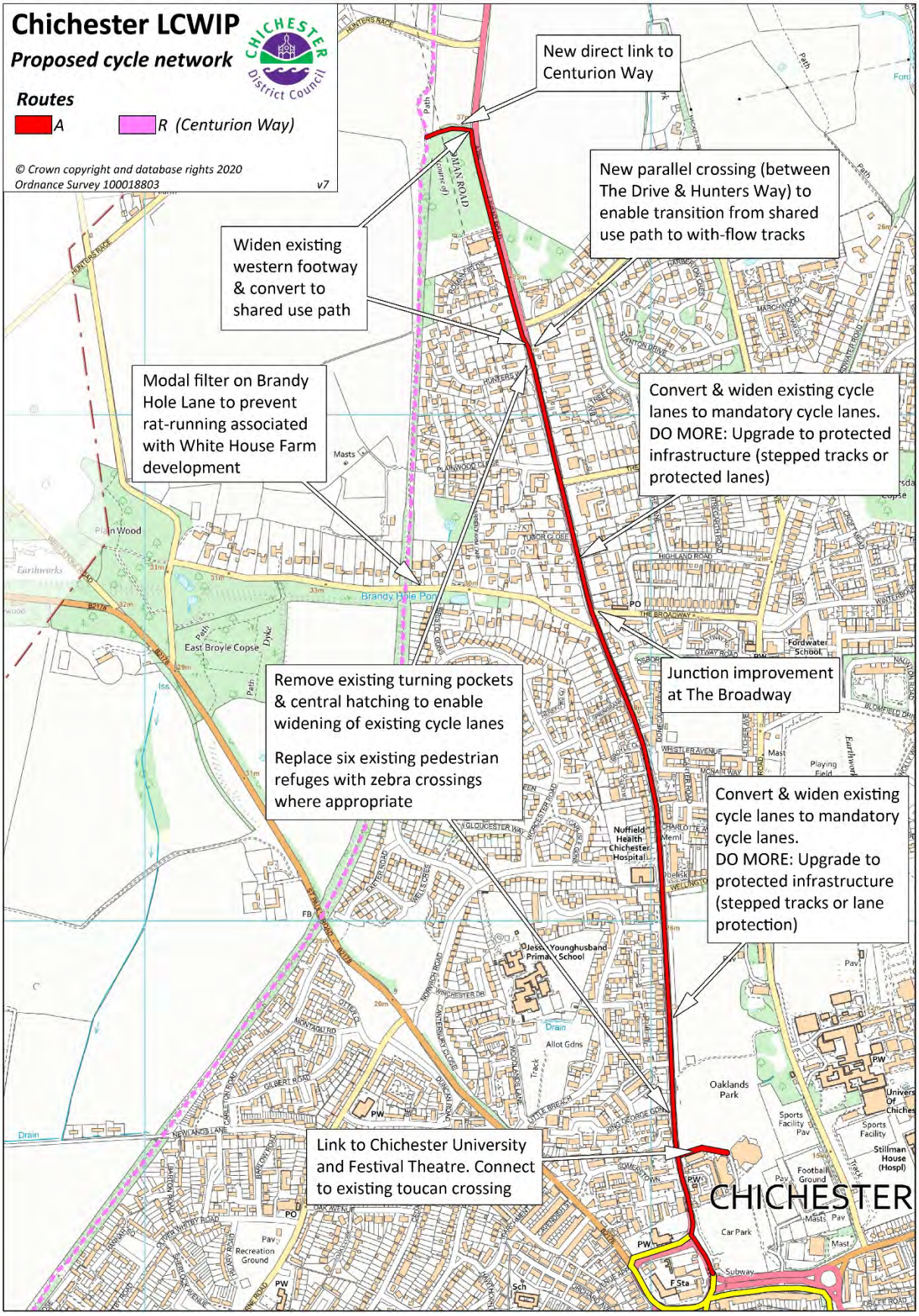


Table 8: Main interventions – "Do Minimum" & "Do More" (references are to Plan 23)

Route	Section	Ref	Do Minimum	Do More	Proposal used for RST & costing
A	**Lavant Road (Hunters Race - Hunters Way)**	1	Widen existing western footway & convert to shared use path. New parallel crossing (between The Drive & Hunters Way) to enable transition from shared use path to with-flow tracks	-	New shared use path with new parallel crossing (Do Minimum)
	Lavant Road / Broyle Road (Hunters Way – Churchside)	2	Convert & widen existing cycle lanes to mandatory cycle lanes, with removal of existing right turn waiting areas & central hatching to provide space. Replace existing pedestrian refuges with zebra crossings.	As 'Do Minimum' but upgrade to protected infrastructure (stepped tracks or wands). Redesign of junction at Brandy Lane/The Broadway.	With-flow protected cycle lanes on Lavant Road & junction upgrade at Brandy Lane/The Broadway (Do More)
B	**Broadway**	3	New crossing facility of Lavant Road at Brandy Hole Lane & proposed cycle facilities (link to Route A) Upgrade existing side-entry junctions to continuous footways. 20mph zone.	Investigate removal of through vehicle access as part of wider Summersdale Low Traffic Neighbourhood approach (would also benefit Routes M & S)	New crossing at Lavant Road plus continuous footways at side-entry junctions (Do Minimum)
	College Lane	4	Upgrade existing side-entry junctions to continuous footways. Introduce 'Cycle Street' south of Connolly Way. Modal filter on College Lane at junction of Spitalfield Lane (possibly with bus gate).	Investigate removal of through vehicle access as part of wider Low Traffic Neighbourhood approach (would also benefit Routes M & S). Alternatively, investigate new alignment for access to University from south	Route along College Lane with 'Cycle Street' Treatment (Do Minimum)
E	**Vinnetrow Road**	5	Improve access from public bridleway to shared use path – replace existing area with informal parking with footway (may need bollards). Remove existing verge/hatch markings & incorporate into widened shared use path	-	No RST impact - localised improvements only

Route	Section	Ref	Do Minimum	Do More	Proposal used for RST & costing
E	**A27 bridge**	6	Improve ramps & landing areas - Highways England (HE) responsibility	As part of future A27 plans, replace cycle bridge with at grade signalised crossing	No RST impact - localised improvements only
	Quarry Lane	7	Protected cycle lanes in both directions between Bognor Roundabout - Whyke Road, with priority at side roads (will require removal of parking)	-	With-flow protected cycle lanes (Do Minimum)
	Whyke Road (Quarry Lane - Cleveland Road	8	Improve junction of Whyke Road/Quarry Lane. Remove parking & replace with cycle lanes	Upgrade to protected lane (stepped tracks or wands) & filter at Quarry Lane	With-flow protected cycle lanes (Do More)
	Cleveland Road – Lyndhurst Road	9	Tighten junctions with Whyke Lane to reduce speeds & change priority to east-west movements	-	No RST impact - localised improvements only
	Caledonian Road	10	Reduce width at junction with Market Avenue and introduce continuous footway Improve link to Toucan crossing & de-clutter footway to increase effective width	-	Slight junction improvements only - no RST impact
	Whyke Road (railway to Bognor Road)	11	-	Removal of through traffic on Whyke Road as in former HE proposal	Proposal would remove through traffic but no specific cycle measures
F	**Whyke Road (A27 bypass junction to Quarry Lane)**	12	-	Removal of through traffic on Whyke Road as in former HE proposal	Proposal would remove through traffic but no specific cycle measures
	North Mundham to B2145/A27	13	Improve surface of bridleway Introduce raised table at school delivery access De-clutter existing shared use path along B2145 & remove excessive markings	-	No RST impact - localised improvements only
	A27 to Kingsham Road	14	Fill in gap in existing crash barrier by A27 shared path De-clutter & re-surface section between A27 track & Sheffield Park Road Improve crossings of Hay Road (both sides of park) to improve access for	Modal filter at north end of Cherry Orchard Road	Do Minimum: No RST impact - localised improvements only

Route	Section	Ref	Do Minimum	Do More	Proposal used for RST & costing
			pedestrians & cyclists		
G	**Chichester Canal towpath**	15	Improved access between canal towpath & A27 cycle track, removing staggered barriers which do not conform to Equality Act Minor surface improvements on towpath. Extend existing crash barrier around A27 layby to protect shared use track	Flexipave or similar permeable all-weather surface on towpath	No RST impact - localised improvements only

Ramp with staggered barriers between Chichester Canal towpath and A27 cycle track

H	**Grosvenor Road**	16	Signed cycle route along low traffic cul-de-sac	Additional traffic calming measures	No RST impact - localised improvements only
	Stockbridge Road (Grosvenor Road – A27)	17	Introduce bi-directional track on eastern side of Stockbridge Road (protected by posts)	As 'Do Minimum' but upgrade to kerbed facility	Kerbed cycle track & upgrade of existing crossing on Stockbridge Road (Do More)
	A27 Bridge / King's Avenue	18	Allow cycling on bridge and improve links between Stockbridge Road (north and south) & bridge	-	As Do Minimum

Route	Section	Ref	Do Minimum	Do More	Proposal used for RST & costing
	Stockbridge Road (King's Avenue – Railway)	19	Replace existing shared use path with mandatory cycle lanes with continuous footways at side-entry junctions (space gained by removing existing right turn waiting area & central hatching) Minimal remodelling of Terminus Road junction	As per 'Do Minimum' but upgrade to protected lanes Upgrade Terminus Road junction to incorporate proposed cycle lanes, with cycle priority on all approaches	With-flow protected cycle lanes (Do More)
K	**Westgate**	20	Replace Orchard Street roundabout with cycling & walking friendly junction 'Cycle Street' between Orchard Street & Parklands Road, with raised table at Henty Gardens junction Two-way cycle track west of Parklands Road Replace roundabout at Sherborne Road junction with crossroads (E-W priority)	Modal filter west of Mount Street junction	Do More
N	**River Lavant open space**	21	Minor maintenance at existing provision	-	As Do Minimum
	Swanfield Drive East	22	Minor maintenance at existing provision	-	As Do Minimum
	St. Pancras Road / West-hampnett Road	23	Improve continuity of back-street route including facilities on Spitalfield Lane	New route with protected cycle lanes	Protected lanes (Do More)
	Cutten Way	24	New parallel crossing at St. Pancras Road junction	-	New crossing (Do Minimum)
Q	**Westgate Fields / Chichester College**	25	Improve cycle route across Chichester station car park Redesign crossing of Swieqi Road (College access) to give priority to cycling & walking	Widen cycle side of track & resurface in coloured bitmac to make it clearer	No RST impact - localised improvements only
SIGNING OF ALL ROUTES					

Table 9 sets out overall capital costs for these routes, plus signing of part (Do Minimum) or all (Do More) of the network.

Table 9: Proposed route costs – "Do Minimum" & "Do More"

Route	Name	Do Minimum (£m)	Do More (£m)
A	Lavant	0.75	2.0
B	University	0.17	0.87
E	Vinnetrow	1.19	1.32
F	North Mundham	0.3	0.51

G (north)	Chichester Canal	0.14	0.24
H	Stockbridge	0.82	1.89
K	Westgate	0.51	0.79
N	St Pancras	0.15	0.7
Q	College	0.08	0.15
Signing of whole network		0.15	0.3
GRAND TOTAL		**4.26**	**8.77**

Core area

Proposals have also been drawn up and costed for cycle provision in the core area, set out in Plan 26. The network in the core area has been split into 17 links which are described in Table 10, with proposed 'Do Minimum' and 'Do More' measures.

The interventions in the core area also include cycle direction signing. As the area will be the main destination for increased cycle trips, increased cycle parking provision should also be provided.

The overall estimated costs for the measures in the core area are £1.0m (Do Minimum) or £4.85m (Do More).

Plan 26: Route network in core area

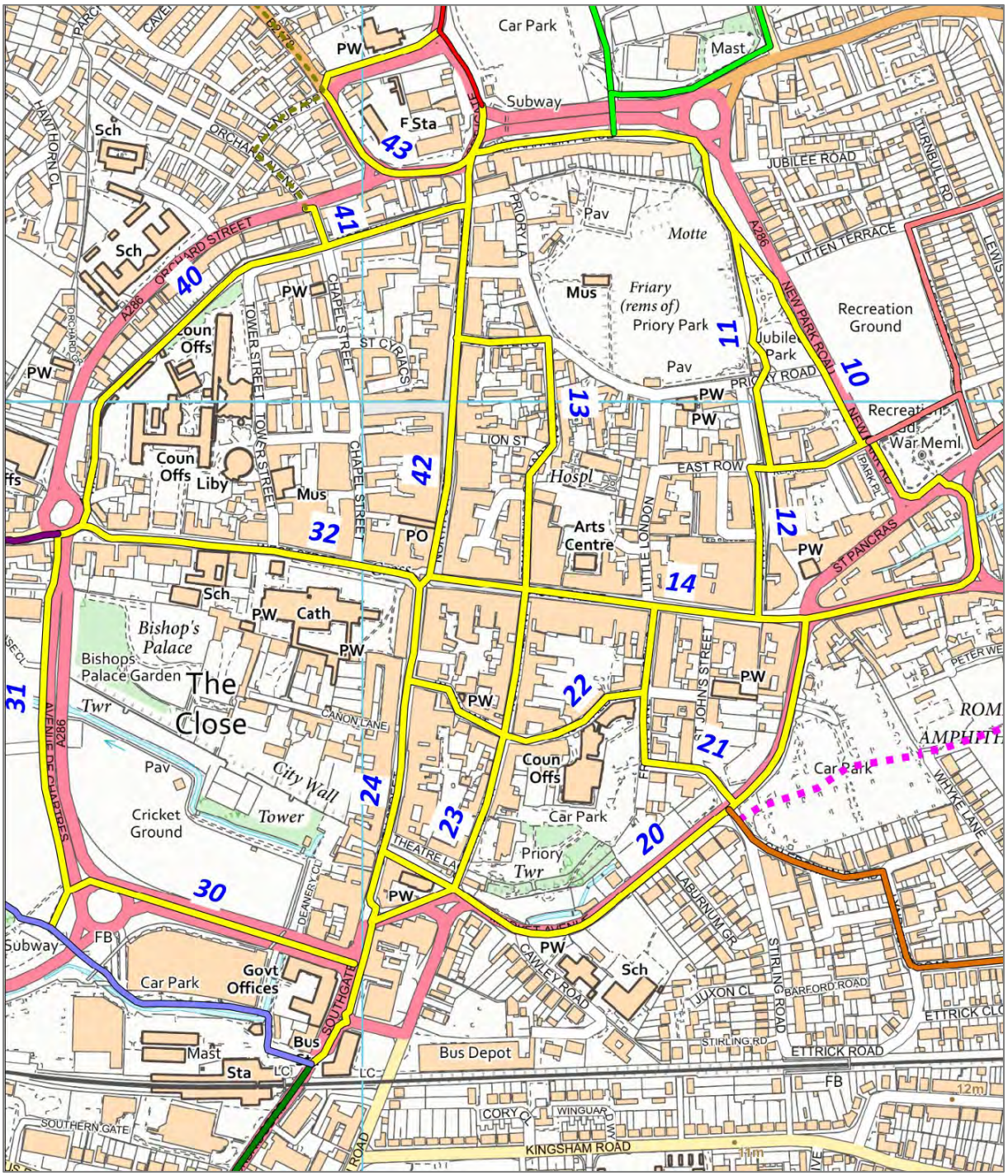


Table 10: Main interventions – core area

Link	Quad-rant	Name	Do Minimum	Do More	Length (km)
10	**NE**	**Oaklands Way / New Park Road**	New parallel route on shared footway/side streets	Protected lanes & crossing of Oaklands Way	0.83
11	**NE**	**Jubilee Gardens**	Widened path & crossing of Priory Road	Low Traffic Neighbourhood	0.26
12	**NE**	**East Walls / Keats**	Clearer link at Keats		0.28

		Way	Way		
13	**NE**	**St Peters / St Martin's Square / St Martin's Street**	Contraflow in St Peters Allow cycles to cross East Street without dismounting		0.36
14		**East Street / The Hornet**	Improved links at eastern end	Experimental removal of cycling restriction	0.56
20	**SE**	**Market Avenue**		Provide two-way cycle track	0.65
21	**SE**	**St John's Street / Friary Lane**	Improved links to Toucan crossing	Low Traffic Neighbourhood	0.18
22	**SE**	**East Pallant / West Pallant**	Continuous footway/ modal filter at west end of West Pallant		0.37
23	**SE**	**North Pallant / South Pallant / Old Market Avenue**	Allow cycles to cross East Street without dismounting Cycle street in Old Market Avenue		0.40
24		**South Street / Southgate**	Improved links at southern end	15mph speed limit for buses	0.53
30	**SW**	**Avenue de Chartres (south)**		Protected cycle lanes	0.31
31	**SW**	**Avenue de Chartres (west)**	Widen path, introduce separation between walking & cycling sides Replace Orchard Street roundabout with walking & cycling friendly junction	Protected cycle lanes	0.41
32		**West Street**	Widen cycle gaps	15mph speed limit for buses	0.38
40	**NW**	**North Walls**	Cycle street		0.57
41	**NW**	**Chapel Street**	Modal filter at walls		0.5
42		**North Street / Northgate**	Improved links at northern end	Experimental removal of cycling restriction	0.49
43	**NW**	**Northgate gyratory**		Complete redesign of Northgate gyratory	0.34
ALL	**Cycle parking**		Increased on-street parking	At least one cycle hub	

Costs

Table 11 shows the overall combined cost of the proposed cycle network measures.

It is important to note that the Do More estimate includes some very large-scale projects such as redesigning the Northgate gyratory. Clearly, projects such as these are not straightforward and would need to be developed over the full ten-year timescale of the

LCWIP. However, the benefits they would bring to Chichester which go far beyond the impact on cycling, as they would reduce the wider effects of motor traffic on the city.

Note the costs include works associated with currently proposed developments (e.g. at White House Farm) if they are part of routes promoted by CDC.

Table 11: Estimated costs – all cycle measures

Area	Do Minimum	Do More
Cycle network outside core area	£4.26m	£8.77m
Core area	£1.0m	£4.85m
TOTAL (CYCLING)	**£5.26m**	**£13.62m**

6.3 Proposals for walking

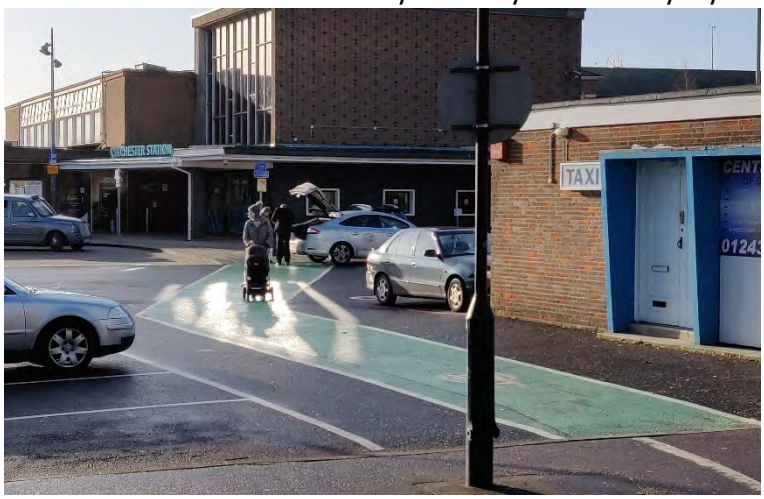
Developing specific recommendations for the core walking zone and key walking routes is more complex than for cycling, as there are a much larger number of smaller measures. Full details are therefore provided in Appendix C rather than in the main LCWIP.

The cost estimate in Table 12 is based on the range of measures set out in the Appendix. However, the estimate in not a simple sum of each proposed measure but is instead a global estimate based on the scale of interventions. Note that the estimate includes several proposals that would be delivered in conjunction with the proposed cycling measures.

Table 12: Estimated costs – all walking measures

Area	Do Minimum	Do More
Core Zone	£0.25m	£0.45m
Key route (west)	£0.1m	£0.2m
Key route (north)	£0.15m	£0.25m
TOTAL (WALKING)	**£0.5m**	**£0.9m**

Link across Chichester station car park – no provision for people walking



6.4 Overall estimate of costs

Table 13 shows the overall estimate, with an additional 15% for contingency/optimism bias. Note that these costs exclude project management, planning issues, detailed design or other costs (including land acquisition if required).

Based on the table of recommendations we have arrived at the outline cost of £6.7million ("Do Minimum") or £16.7 ("Do More) for the LCWIP as a whole.

Table 13: Estimated costs – all measures

Focus	Do Minimum	Do More
Cycling network	£6.05m	£15.66m
Walking measures	£0.65m	£1.04m
TOTAL	**£6.7m**	**£16.7m**

As noted above, some measures proposed for walking and cycling will overlap (e.g. the southern end of College Lane). Hence it is likely that the overall costs would be lower when areas are examined in detail rather than from the perspective of walking or cycling alone.

Example of low cost improvement – removal of unnecessary "END" marking at Mount Lane

Example of high cost improvement – replacement of Northgate gyratory

7. Conclusions

7.1 General

The general assessment of the demand for both cycling and walking in Chichester shows the potential to further develop the existing levels, which are the highest in West Sussex.

However, developing proposals which will be of a sufficient quality to have an impact will require significant investment, both in terms of cost and resources. The importance of political leadership to take the proposals forward must also not be underestimated.

7.2 Funding

It must be stressed that funding for these schemes is not expected to be provided by CDC and WSCC alone. As is generally the case with projects of this type, a variety of funding sources would be needed, including external grants, other third parties and contributions from developers. This includes Emergency Active Travel Fund (EATF) funding from central government, as well as any future support announced as part of the revised CWIS expected to be announced later in 2020.

It is also important to note that the LCWIP is a 10 year programme. The average cost per year of around £0.7m for the Do Minimum measures would be a significant increase on current levels of expenditure, and would mean around £18/year for each person in the LCWIP area. However, this matches the level generally regarded as the minimum needed to have a significant impact on cycling levels, including by the All Party Parliamentary Cycling Group report "Get Britain Cycling" in 2013.

Expenditure to deliver Do More measures would result in an annual cost of £1.7m. While this equates to over £40/person each year, this sum would deliver a much higher quality of interventions. It would lead to a higher level of shift to cycling in particular, as well as benefitting walking. There would also be a significant positive impact on the city's general environment which would support economic development.

7.3 Impact of COVID-19 pandemic

The impact of the pandemic has been unprecedented. As well as the tragic loss of life and the wider effect on health, there have been major impacts on the economy and travel. One of these has been a rise in cycling and walking during the Lockdown period. This is at risk as motor traffic rises, in part due to the loss of capacity on public transport.

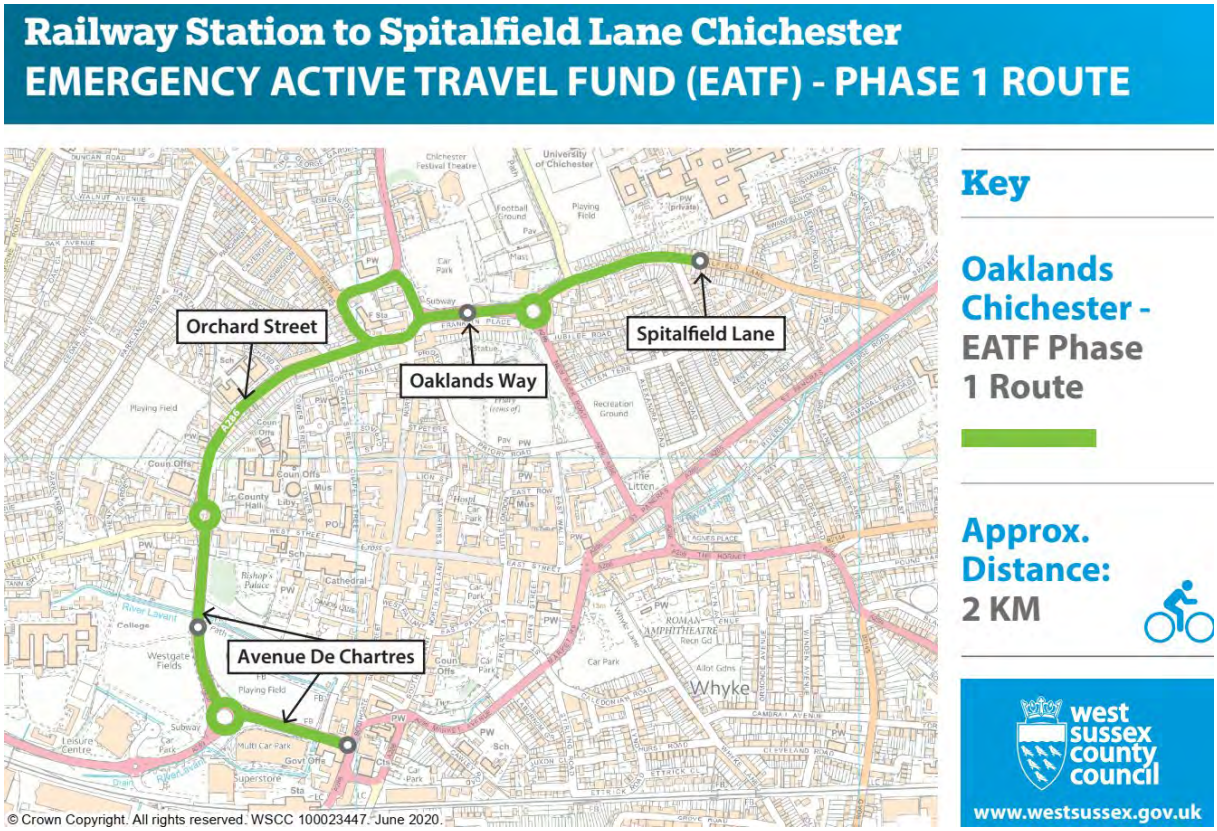
The government launched the EATF in May 2020 to help local authorities deliver significant measures to provide infrastructure for walking and cycling, helping to address the impact of COVID-19. A letter from the Department for Transport set out requirement for councils to demonstrate *"swift and meaningful plans to reallocate roadspace to cyclists and pedestrians, including on strategic corridors."* Funding is to be provided in two tranches, with Tranche 1 being 20% of the overall amount

In June 2020 WSCC was allocated a sum of £781,000 for Tranche 1 of the EATF. This has been committed to deliver 21km of new and improved cycle infrastructure across the county. In Chichester, the proposed interventions published by WSCC in June 2020 will focus on the A286 ring-road (see Plan 27). The measures involve reallocating road space for cycling by converting one lane of the dual carriageway in each direction to form a cycle lane, with light protection. Other sections of the route will have a range of treatments.

The 2km route will link to the central retail area and other major employment sites, such as the University of Chichester and St Richard's Hospital. There may be potential for part or all of the route to become permanent.

The works will be supported by a 20mph speed limit and create links to existing cycle facilities. Alternatives will be provided to cycle paths where physical distancing may be difficult to maintain.

Plan 27: WSCC EATF Phase 1 route – Chichester station to Spitalfield Lane (from WSCC press release, June 2020)



7.4 Next steps

Stage 5 of the LCWIP covers prioritisation of proposed measures. Initially it was intended for this to be included as part of this LCWIP. However, it is now being delivered by WSCC in conjunction with the county-wide, South Downs National Park and other area LCWIPs.

WSCC is exploring the possibility of further support to allow a consistent approach to all LCWIPS. This will include application of a Multi-Criteria Assessment Framework so that proposals in different areas (and LCWIPs) can be assessed on the same basis. This will include use of the DfT's Active Mode Appraisal Tool (AMAT) which will further allow a degree of comparison and consistency with LCWIP projects elsewhere in England.

The final Stage 6 of the LCWIP is integration and application. This will be developed by CDC following the adoption of the current document. It will include consideration of how the LCWIP proposals can be incorporated into the council's Infrastructure Business Plan (IBP).

The IBP prioritises the infrastructure needed to support growth identified in the CDC Local Plan via a five year rolling programme for its delivery, together with possible funding broken down by source (including the CIL Spending Plan). The latest IBP was approved in March 2020.

Appendix A. Glossary

1. Acronyms

AMAT	Active Mode Appraisal Tool
CDC	Chichester District Council
CIL	Community Infrastructure Levy
CWIS	Cycling & Walking Investment Strategy
CWZ	Core Walking Zone
DfT	Department for Transport
IBP	Infrastructure Business Plan
KSI	Killed or Seriously Injured
LCWIP	Local Cycling & Walking Infrastructure Plan
LSOA	Lower Super Output Area
PCT	Propensity to Cycle Tool
RST	Route Selection Tool
SDNPA	South Downs National Park Authority
TI	Transport Initiatives
WRAT	Walking Route Assessment Tool
WSCC	West Sussex County Council

2. Technical terms

Measure & description	Photo ref
Bus gate A modal filter (see below) where only buses, cycles and pedestrians (and possibly taxis) are allowed to pass. The most effective bus gates use automated rising/falling bollards which lower to allow buses to pass (as in Graylingwell Drive) but can also be enforced by camera. Sign-only restrictions may be ignored.	
Continuous footway A way of providing priority for pedestrians over turning vehicles at side roads by continuing the footway surface across the junction, giving strong visual priority to people walking. A 'continuous cycleway' can be provided in a similar way for a cycle lane or track.	

Contraflow cycling

Where cycles are allowed to travel in both directions on streets that are one-way for motor traffic. It can be implemented using lane markings and signing (with or without some form of physical protection), or by using signing only at the entrance to the contraflow section.

Cycle bypass

Physical separation for cycles enabling them to avoid a restriction for other road users such as traffic signals and chicanes

Cycle lane

Advisory – dashed white line marking out a lane intended for cycling. Motor vehicles should not enter the lane unless it is unavoidable but are not legally prohibited from doing so. Advisory lanes offer little benefit to people cycling.

Mandatory – solid white line marking out a lane for the exclusive use of cycles. Motor vehicles are legally prohibited from driving in the lane. Mandatory lanes offer some benefit to people cycling but are not protected from traffic encroachment.

Cycle parking Cycle parking ranges from hoops ('Sheffield stands') to secure on street parking ('bike hangars'), lockers and compounds. Cycle parking should be fit-for-purpose, secure and well located, and allow all types of cycles to be parked.	
Cycle street Low traffic street where motor vehicles are allowed but cycling has priority	
Floating bus stop / bus stop bypass Cycle track running behind a bus stop so that cycles do not have to interact with buses. May be at a lower level than the stop and footway, or at the same level. Some have zebra crossings for bus passengers to cross the cycle track.	
Light protection Intermittently placed objects (e.g. bollards, posts, planters or sections of low kerb) to separate and protect people cycling from motor traffic. Usually used in conjunction with a mandatory cycle lane.	

Low Traffic Neighbourhood An area of streets (usually mostly residential) where <u>through</u> motor traffic is removed or reduced and calmed to provide a better, more liveable neighbourhood to support walking, cycling, play and community use. Access by motor vehicles is still possible but usually from one direction only.	
Modal filter (road closure) A permanent or part-time road closure for motor traffic with access for pedestrians and cycles. It may be enforced by physical measures or signing. Camera enforcement can be used but only London councils have legal powers to do this, though a recent ministerial announcement indicates this might change.	
Parallel crossing A crossing similar to a zebra crossing, which can be used by cycles as well as pedestrians (may be on a raised table)	
Protected cycle track A path for cycling physically separated from areas used by motor vehicles and pedestrians. It may be next to, or completely away from the carriageway.	

Raised table A flat raised section of the carriageway, used to slow traffic and make it easier for pedestrians to cross	
School Street Section of street outside a school with restricted access during school pick-up and drop-off times, enforced by physical measures or signs. Camera enforcement can be used but only London councils have legal powers to do this, though a recent ministerial announcement indicates this might change.	
Separation A physical feature separating space used by cycles and pedestrians on a traffic-free path, such as a kerb, white line or surfacing in different colours or materials	
Shared use path A path which is shared by pedestrians and cycles but where motor traffic is not permitted. It can include footways alongside carriageways as well as routes completely away from roads, like in parks. Shared paths are not recommended where there is heavy use by pedestrians.	
Toucan crossing A signal controlled crossing that can be used by both pedestrians and cycles (may be on a raised table)