Western Gateway Strategic Cycle Network

Western Gateway Sub-national Transport Body

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Executive summary

This report sets out the case for a Western Gateway Strategic Cycle Network (WGSCN) linking key settlements and providing rural connections to enable longer distance cycling within the region. The need for this network was identified by the Western Gateway Strategic Transport Plan 2020-2025.

The Local Authorities within the Western Gateway Sub-national Transport Body (WGSTB) region have their own existing local plans and priorities for cycling networks. This report does not seek to supersede those plans and priorities but to link these networks together to provide connectivity across longer distances. The growth of electric mobility and the greater cycling distances these modes unlock are important factors which are likely to rapidly increase the value of the WGSCN and other longer distance cycling networks like it.

A WGSCN would bring a wide range of benefits, aligned to the themes of the long term Western Gateway Strategic Transport Plan (2024-2050) including: supporting growth and the economy (through access to transport hubs, development, leisure, tourism, and healthcare), decarbonisation (through enabling mode shift), and access to services and opportunity (by linking rural areas to settlements and service centres).

The report details how a WGSCN aligns well with national transport and environmental policy, as well as local policies and initiatives. This report also explains how the WGSCN has been developed, and how it complements and aligns with existing Local Cycling and Walking Infrastructure Plans (LCWIPs).

The key output of this study is a desire line network showing strategic cycle links within the WGSTB region. Indicative route alignments (shown opposite) have been used to assess each routes connectivity to key destinations and the level of cycling demand they are likely to generate (assessment scoring for the highest scoring half of the routes shown opposite). However, these route alignments are not finalised. Any route taken forward will require further feasibility study to confirm preferred alignments to meet the desire lines identified.

The next steps for making the entire network a reality have also been explored. As well as further work to refine the routes, the key issues for delivery success will be effective stakeholder engagement and securing funding through various sources.

ROUTE NAME	Length (KM)	SCORE
Gloucester to Cheltenham	15.0	32
Bristol to Cirencester	66.7	30
Bristol to Bath	20.4	30
Bristol Airport to Bristol	12.5	30
Midsomer Norton to Bath	17.4	29
Weston super Mare to Bristol	49.2	29
Bournemouth to New Milton	17.2	28
Stroud to Gloucester	20.9	27
Swindon to Marlborough	22.8	26
Bristol to Stroud	77.3	26
Cirencester to Swindon	25.7	24
Tewkesbury to Cheltenham	18.4	24
Chepstow to Bristol	32.8	24
Bristol to Frome	42.5	24
Bath to Chippenham	22.5	23
Chippenham to Melksham	11.7	23
Yate to Bath	24.9	23
Bournemouth to Corfe Castle	48.8	22
Salisbury to Southampton	45.8	22
Clevedon to Bristol	25.5	22
Bath to Trowbridge	19.9	22
Weston-super-Mare to Highbridge	23.7	21
Gillingham to Bournemouth	70.5	20
Salisbury to Bournemouth	54.6	20
Calne to Swindon	27.7	20
Stroud to Cirencester	19.7	20

Table 0-1 Demand and Connectivity assessment – Top 26 routes

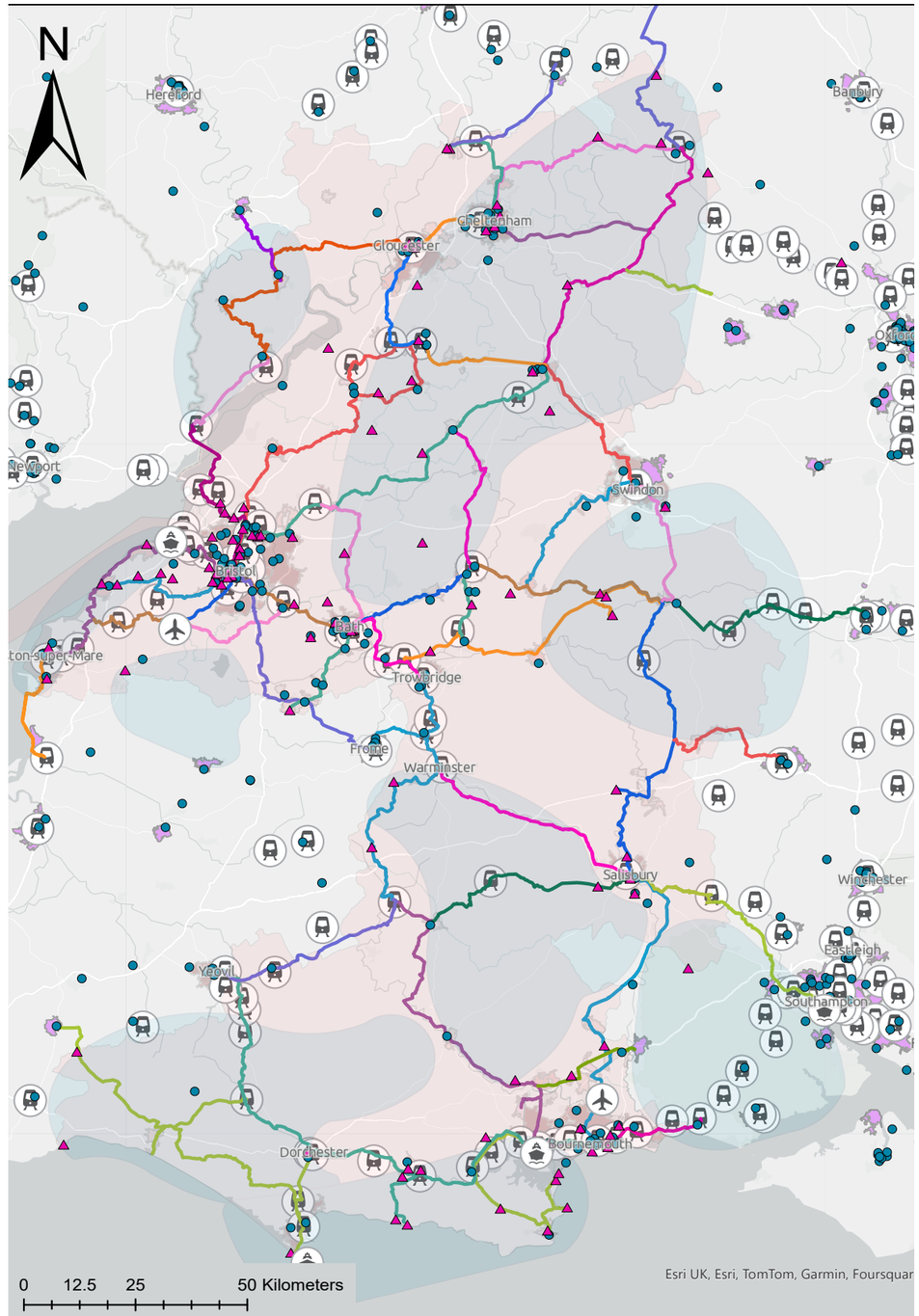


Figure 0-1 Indicative Strategic Cycle Network

1 Introduction

1.1 Purpose of this report

This report aims to set out plans for a Western Gateway Strategic Cycle Network (WGSCN) linking key settlements, national and international transport hubs and key destinations across Western Gateway. The network also provides rural connections to enable longer distance cycling for leisure, tourism, and access to services and developments.

The WGSCN will complement local networks set out in LCWIPs developed by the constituent Local Authorities (LA) within the region, identifying gaps (particularly cross-boundary links). Connections to new strategic development sites are a key focus.

The need to develop the WGSCN was identified in the Western Gateway Sub-national Transport Body (WGSTB) Strategic Transport Plan 2020-2025, which outlines a strategy for identifying gaps in strategic cycle routes in the region, to facilitate longer distance cycle journeys[1].

The network identified supports the long term vision in the Western Gateway Strategic Transport Plan 2024-2050 and will feed into future iterations of the WGSTB Strategic Investment Plan. The intention of this regional strategy is to set out a high-level, long distance strategic cycle network plan for the WGSTB region. It includes cross-boundary routes to develop greater interconnectivity between Local Authorities areas and identifies those that may support new development.

The entire network must be delivered for the WGSTB to meet their strategic goals to decarbonise the transport network and improve connectivity to promote sustainable growth. However, the report also uses a robust and fair methodology to assess which routes are likely to generate the most cycling in the region. This will enable the WGSTB to be poised to act quickly and strategically should funding become available and to influence future funding allocations and reviews.

It is important to note that the exact route alignments identified in this report are not finalised and require further feasibility studies to determine the most favourable routing. The WGSCN should be regularly updated to incorporate routes developed by the Local Authorities where appropriate.

The report consists of the following sections:

Section 1 – Introduction.

Section 2 – Policy context.

Section 3 – Evidence base.

Section 4 – Network planning methodology.

Section 5 – Network route assessment.

Section 6 – Design principles.

Section 7 – Next steps.

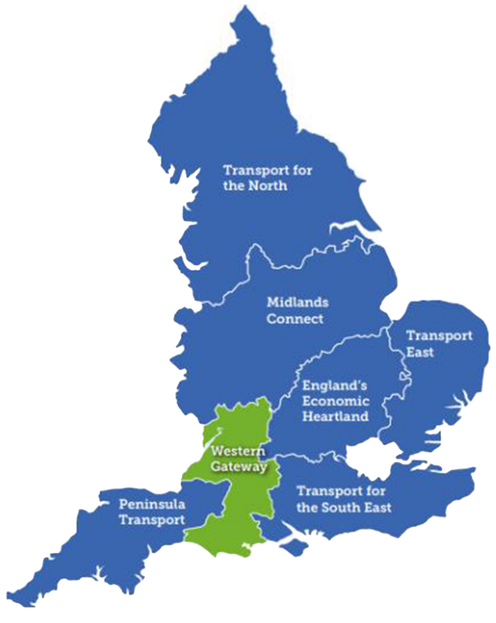
1.2 Study Area

The WGSTB is formed of eight Local Authorities and one Combined Authority (West of England Mayoral Combined Authority, WEMCA). The region comprises major urban centres and conurbations, market towns and rural areas, coastal and inland, as seen in Figure 1-1. The WGSTB has committed to supporting sustainable growth and to transitioning to a decarbonised transport system.

The WGSTB region is surrounded by other transport bodies to the south west (the Peninsula Transport area) and to the north and east (Midlands Connect, England's Economic Heartland and Transport for the South East).

The WGSTB supports over 1.6 million jobs and the area includes some of the country's fastest growing conurbations, with the rate of population growth forecast to 2041 being higher within Western Gateway than England as a whole. The potential forecast increase in regional traffic of 25% by 2031 could negatively impact key strategic travel corridors if not sustainably managed[2].

Figure 1-1 Local Authority members of the Western Gateway and their boundaries



1 Western Gateway Strategic Transport Plan 2020-2025

2 Story of Place | Western Gateway STB

2 Policy context

2.1 National policy

There are a number of key national policies which set out the UK government's support for investment in Active Travel. The majority are transport policies but Active Travel also forms part of the government's Net Zero agenda. Collectively, they show that Active Travel is currently at the forefront of some of the government's major priorities.

2.1.1 Integrated National Transport Strategy (INTS)[3]

The Department for Transport (DfT) is developing the INTS which will set the high-level direction for how transport should be designed, built and operated in England over the next 10 years. The DfT recently set out a call for ideas and evidence which ran between November 2024 and February 2025, the results of this are yet to be released. The strategy will aim to set out a single national vision which will:

- Put people who use transport and their needs at its heart.
- Empower local leaders to deliver integrated transport solutions that meet the needs of their local communities.

The WGSCN will provide an opportunity to integrate cycling with other transport modes through transport interchanges such as mobility hubs.

2.1.2 National Planning Policy Framework (NPPF) Reforms[4]

The Ministry of Housing, Communities and Local Government (MHCLG) released an updated NPPF in December 2024. A key change in relation to transport planning was an emphasis on shifting from a "predict and provide" approach to a "vision-led" approach. This means working with residents, local planning authorities and developers to set a vision for local places and designing the transport and behavioural conditions to help achieve this vision.

The WGSCN sets out a clear vision for how local places and regionally significant destinations can be connected through a regional cycle network, enabling a proportion of travel demand to be accommodated through cycling – including longer distance rural trips that typically have fewer transport choices at present.

2.1.3 Gear Change

In Gear Change (2020), the UK Government's white paper set out a bold vision for walking and cycling in England, with a six-fold increase in funding and ambitious targets to match. The Department for Transport (DfT) expects that Local Authorities will make significant changes to their road layouts to meet these targets, providing more space to people walking and cycling and locking in the many benefits of active travel[5]. The government's major target is that half of all journeys in towns and cities will be cycled or walked by 2030. A key commitment, of particular relevance to the WGSCN, made in Gear Change is that funding will be made available to improve the National Cycle Network which serves rural areas all over the country. Funding will be made available where the Network can be extended to enable everyday journeys to be cycled. The cycling budget announced in Gear Change will be held by a new commissioning body, Active Travel England, which will review all funding applications.

2.1.4 Cycling and Walking Investment Strategies (CWIS)

The Infrastructure Act 2025 established a duty for the UK government to publish a Cycling and Walking Investment Strategy for England setting out medium term aspirations and spending plans for investments in active travel programmes. The first CWIS was published in 2017 with a focus on improving infrastructure, safety, and promoting active travel. A 5-year investment plan was set out[6]. CWIS 2 published in 2021 set out objectives and financial resources for the period April 2021 to March 2025 and was closely tied to the aspirations set out in Gear Change[7]. A third CWIS was announced in early 2025 and is expected to be published in 2025[8].

2.1.5 Local Transport Note 1/20 (LTN 1/20)

Alongside Gear Change, the government published new cycle infrastructure design guidance. The guidance raises the standard of cycle infrastructure design, providing clarity on what type of provision is suitable in different contexts and sets out five core design principles all cycle networks and routes should be: Coherent, Direct, Safe, Comfortable and Attractive. One of the conditions of receiving future funding for cycle infrastructure will be that it is designed in accordance with Local Transport Note (LTN) 1/20. A version of the guidance with a more rural focus is expected imminently.

2.1.6 Active Travel England

One further announcement made in Gear Change was the establishment of Active Travel England (ATE), a new inspectorate whose role is to ensure that public investment delivers high-quality active travel infrastructure in accordance with LTN 1/20 and other UK government design guidance and standards. Active Travel England assess and award funding to Local Authorities and are a statutory consultee in the planning system. ATE have developed a number of design audit tools, and offer design surgeries and reviews to provide support throughout the scheme development process.

2.1.7 Transport Decarbonisation Plan

Decarbonising transport: A Better, Greener Britain (2021) places the ambitions set out in Gear Change into the wider context of the government's transport decarbonisation agenda. The plan covers a wide variety of changes to transport which will need to happen in order to meet the government's core target of reaching Net Zero by 2050. Strategic Priority 1 is accelerating modal shift to public and active transport, making public and active transport the natural first choice for daily activities. The benefits of electric cycles are referenced within the plan as a new alternative for journeys which are currently too far to cycle, these are exactly the sort of journeys that the WGSCN can enable.

3 Integrated National Transport Strategy: a call for ideas - GOV.UK
4 Proposed reforms to the National Planning Policy Framework and other changes to the planning system - GOV.UK
5 Gear change: a bold vision for cycling and walking
6 Cycling and Walking Investment Strategy
7 The second cycling and walking investment strategy (CWIS2) - GOV.UK
8 Written statements - Written questions, answers and statements - UK Parliament

2.1.8 Net Zero Strategy

Looking even wider than transport, in October 2021, the UK Government published its Net Zero Strategy: Build Back Greener. This document sets out how Net Zero by 2050 will be achieved across every sector of the UK. It reiterates the targets and policies within the Transport Decarbonisation Plan, that £2bn will be invested into walking and cycling to drive mode shift to active travel.

2.1.9 Consolidated Active Travel Funding (CATF)

The CATF allocates central government fund to Local Authorities to support the development and construction of active travel facilities in England. It comprises revenue allocations to support network planning, early scheme development and engagement, and capital funding to support scheme delivery.

CATF final allocations to Local Authorities for 2025/6 are shown in Table 2[9]. In total, nearly £10m is allocated to authorities in the WGSTB region to develop and deliver active travel improvements.

Name	Consolidated Active Travel Fund (2025 to 2026) (£, to nearest £5k)
Bournemouth, Christchurch and Poole Unitary Authority	1,460,000
Dorset Unitary Authority	775,000
Gloucestershire County Council	2,360,000
North Somerset Unitary Authority	440,000
WEMCA	3,480,000
Wiltshire Unitary Authority	1,045,000
Total	**9,560,000**

Table 2-1 WGSTB CAFT allocations

9 Consolidated Active Travel Fund: final allocations - GOV.UK

2.2 Local policies and plans

2.2.1 Western Gateway Strategic Transport Plan[2]

The Western Gateway Strategic Transport Plan (WGSTP) (2024-2050) takes the previous STP (2020-2025) further into the future. This long term strategy interprets national policy for a regional context to guide future transport investment and provide a supporting context for the nine Local Authorities within the WGSTB in producing their Local Transport Plans. The Vision of the WGSTP is "A resilient transport network that works for everyone and is fit for the future, helping people and businesses throughout the Western Gateway to thrive while protecting our environment." To help achieve this, five key aims are considered:

- Sustainable growth and economy;
- Decarbonisation and air quality;
- Access to services and opportunities;
- Facilitating strategic north-south movement; and
- Movement of goods.

The WGSTP identifies the need for greater provision of modal choice with the potential for a 17% shift in vehicle kms from cars to sustainable modes across the region. Cycling is a key mode of transport to target for modal shift, as it benefits the physical and mental health of residents, improves air quality and eases congestion across the region. The Plan states that it is essential to provide safe and attractive cycle routes to cater for the increasing demand for leisure trips and work. Access to services and opportunities – particularly for those where lack of transport or digital connectivity impedes access to opportunities, is another key reason for further enabling a shift to cycling.

WGSTB will work with stakeholders to facilitate longer distance routes, to ensure that new and existing communities have access to a full range of travel choices. Local stakeholders believe there is a need to manage existing road space more effectively and support future growth through the provision of better cycling facilities. There is also a recognition by stakeholders of the importance of transport hubs and the role of interchanges in urban areas, especially improving first and last mile cycling connections.

2.2.2 Western Gateway Strategic Investment Plan 2025-2035[10]

WGSTB has recently approved a Strategic Investment Plan (WGSIP) for the period 2025-2035. The plan sets out priority proposals for regional investment in the WGSTB, these include:

- Accessibility improvements at rail stations.
- A package of improvements to deliver a strategic, sustainable travel network (including active travel routes and bus corridor improvements) connecting South East Dorset to the Bournemouth, Christchurch and Poole (BCP) conurbation.
- Cheltenham Spa Station access link to the Gloucestershire Cycle Spine.
- A354 multi-modal corridor improvements south of Dorchester to Weymouth and Portland (including bus priority and active travel measures along the corridor and within town centres).
- A bus corridor package in Bath with a series of improvements along the main bus routes in Bath for public transport, walking and cycling.
- Development of regional Active Travel routes to connect regional gateways, major centres of population and employment between BCP and the neighbouring authorities of Dorset Council and Hampshire County Council.
- Ashchurch for Tewkesbury Station access improvements linked by a proposed repurposed A46 active travel corridor based on the preferred option for the M5J9/A46 scheme.

WGSTB's STP and SIP have a focus on supporting delivery of new housing and employment floorspace , while providing the sustainable transport connections that reduce dependency on private vehicles.

10 Delivering our vision: Western Gateway draft Strategic Investment Plan 2025-2035

2.2.3 Local Walking Cycling Infrastructure Plans

LCWIPs were set out in the UK Government's Cycling and Walking Investment Strategy (2017) and are a strategic approach to identifying cycling and walking improvements required at the local level. They enable a long-term approach to developing local cycling and walking networks, ideally over a 10 year period, and support the acquisition of UK government funding.

LCWIPs are not mandatory but all the Local Authorities within the WGSTB have developed at least some form of LCWIP for part of their area. Some are complete, some are still subject to public consultation, some are awaiting the outcome of public consultation, and some are still in-development. LCWIPs tend to focus on the largest settlements where uptake of walking and cycling is likely to be greatest. Where they exist, these LCWIPs have been used as a basis for the WGSCN.

2.2.4 Climate Emergency Declarations

All of the constituent authorities within the WGSTB have declared climate emergencies and released a climate emergency action plan. These plans detail:

- How each authority aims to achieve Carbon Net-Zero or Carbon neutrality.
- Major shifts to the transport network to enable sustainable transport methods such as cycling.

The WGSCN has the potential to support these climate emergency and net-zero plans though a regional cycle network that connects key destinations, settlements and national and international gateways, and enables modal shift to a sustainable transport choice.

2.2.5 Clean Air Zones (CAZs) in Bristol and Bath

Both Bristol and Bath within the WGSTB have active CAZs which charge vehicles if they do not meet the nitrogen dioxide emissions standards for driving in the zone. This aims to improve air quality within the cities.

In Bath, the CAZ was set up in 2021. Restrictions apply to commercial vehicles. The number of sites in the zone exceeding the legal limit of nitrogen dioxide as an annual average fell from 10 sites in 2019 to no sites in 2023[11].

In Bristol, the CAZ was set up in 2022, and in the first 12 months of operation, average annual nitrogen dioxide levels fell by almost 13% inside the zone and almost 10% outside of the zone, when compared to the previous 12 months. This is based on results across 193 monitoring locations in Bristol. The first Clean Air Zone report was published in January 2024. Bristol City Council will be publishing a 2024 Clean Air Zone report in 2025[12].

The WGSCN has the potential to help provide people with alternative travel choices to taking vehicles into Bristol CAZ.

11 Bath's Clean Air Zone

12 Air quality

3 Evidence base

3.1 Introduction

The WGSCN seeks to provide region-wide connectivity, enabling both local access to regionally significant key destinations, and longer-distance trips across the area – particularly in rural locations. Cycling for many is seen as a travel option for shorter local journeys, typically up to 5km. However, there is evidence that longer distance cycle trips are becoming more common and can contribute towards wider benefits particularly in areas with a substantial leisure/tourism economy such as the WGSTB region.

This chapter details the evidence base showing the potential benefits of the WGSCN, and how they align with the key themes of the WGSTP;

- Theme 1 - Sustainable growth and economy.
  - Economic benefits.
  - Supporting the tourism industry .
  - Wider benefits - health.
- Theme 2 - Decarbonisation and air quality.
- Theme 3 – Access to services and opportunities.
  - Leisure, education and work opportunities.
  - Improving access to rail.
  - Future Transport Zones and mobility hubs.
  - Electric cycles, cargo cycles and scooters.

It should be noted the WGSCN also aligns with Theme 4 - Facilitating strategic north-south movement. The network provides connectivity throughout the region, offering alternatives to many of the routes with challenges identified the WGSTP (e.g. A35, A36, A46, A303, A31, A37, A350). The number of end-to-end long-distance cycle trips will not lead to a substantial mode-shift on these key routes, but connections giving alternative travel choices within these corridors will help to address the challenges they face.

3.2 Theme 1 – Sustainable growth and economy

3.2.1 Economic benefits

Investment in active travel typically delivers good economic benefits. It can support the local economy, reduce work absence and boost productivity, reduce congestion, and provide wider economic benefits related to health and the environment. Cycling also contributes £5.4bn[11] to the economy per year, which is 3x more than the UK steel industry, and supports 64,000 jobs.

In terms of the local economy, there is evidence to show that improving cycling infrastructure can increase shopping footfall by 40%[13].

Additionally, physically active employees take 27% fewer days off sick than their colleagues and 73% of employees who cycle feel that it makes them more productive at work. In terms of public health impact, physical inactivity costs the NHS up to £1bn per annum, with further indirect costs calculated at £8.2bn[11]. The health benefits from cycling are further set out in Section 3.2.3, and help to reduce this economic cost.

3.2.2 Supporting the tourism industry in rural areas

A focus for the WGSCN is to connect key destinations in the area including the most visited tourist destinations and areas. These areas can experience seasonal uplifts in travel demand of 20-35%[14] and enabling non-car travel choices will help to improve access and manage the impacts of congestion. In rural tourism areas, visitors typically like to travel around within those areas, enjoying the natural landscape as well as visiting specific sites. As well as cycling trips for general tourism purposes, the network in these areas would also potentially attract tourists on cycling specific holidays.

In line with the WGSIP, nine key rural tourism areas are defined within the WGSTB region, these are:

- The Forest of Dean – National Forest Estate.
- Cotswolds – National Landscape.
- North Wessex Downs – National Landscape.
- Weston-Super-Mare to Clevedon Coast.
- Mendip Hills – National Landscape.
- Dorset – National Landscape.
- Cranborne Chase & West Wiltshire – National Landscape.
- New Forest – National Park.
- Jurassic Coast – World Heritage Site

- Case study: Peak District National Park cycling network

In the past decade, the Peak District National Park has invested in developing a network of cycle routes to create more connectivity and support cycle friendly infrastructure, as well as developing wider sustainable transport packages. The popularity of the trails has increased and generated additional economic benefits of at least £1.68 million for the local area[15].

- Case study: Long distance cycling routes, Devon

Devon County Council (DCC) commissioned an economic assessment of three landmark walking and cycling routes within Devon's rural cycling network: Drake's Trail, Exe Estuary Trail and the Tarka Trail. The assessment estimated that 270,000 leisure cycling trips were made across the three routes each year. Tourism expenditure associated with the three routes was estimated to contribute £13.4m per year to the local economy.

3.2.3 Wider benefits - health

- Physical health

There is good evidence that cycling, like other forms of physical exercise, has significant positive impacts on our health. 20 minutes of exercise a day reduces the risk of developing various severe health problems, including over 20 chronic conditions and diseases, such as some cancers, heart disease, and type 2 diabetes.

The WGSTB region has a relatively active population compared to the rest of the UK with percentages of physically inactive adults ranging from 16-21.6% across the constituent authorities. The UK average for the percentage of physically inactive adults is 22.6%[16]. Despite this a significant fraction of the adult population with the WGSTB region is inactive, and increasing cycling would provide major benefits for the local population.

- Mental health

1 in 4 people experience a mental health problem of some kind each year in England[17]. As with physical health, physical activity is beneficial for mental health. Since January 2022, the Department for Transport has been running a number of Active Travel Social Prescribing Pilots including Bath & North East Somerset, Bristol and North Somerset within the WGSTB. Some people with mental health problems can find exercising difficult so integrating being active into daily life with activities like cycling can be an ideal way of using activity to combat poor mental health[18].

Spending time in nature or green spaces can also benefit mental well-being and cycling is a good way to access these environments[19]. The WGSCN covers a range of rural and semi-rural environments which will bring users of the network into contact with the natural environment.

13 Gear change: a bold vision for cycling and walking
14 WGSTB STP 2024-2050

15 derbyshire.gov.uk

16 Physical Activity - Data | Fingertips | Department of Health and Social Care
17 Mental health facts and statistics - Mind
18 How are Physical Activity and Mental Health Connected | Mind - Mind
19 Green and Blue Spaces and Mental Health WHO

3.3 Theme 2 – Decarbonisation and Air Quality

3.3.1 Decarbonisation and environmental benefits

The WGSTP 2024-2050 states the objective to reduce annual carbon emissions to net-zero by 2050, partly though a shift of 17% of current vehicle kms to sustainable modes.

In the UK, 71% of trips made in 2023 were 5 miles or less[20], a distance that can typically be cycled in 30 minutes or less (much less if using an electric cycle). The WGSCN would enable cycle journeys of even greater distances by some users, up to 10 miles or more which would mean cycling could become an option for up to 85% of trips served by the network.

Typically, long-distance vehicle trips have the greatest carbon emissions – whilst few long-distance trips will reasonably shift to cycling, providing good access to key transport hubs such as stations will enable long-distance trips to switch to sustainable modes. Transport hubs are a key focus for the WGSCN, as well as the local networks.

As well as decarbonisation, the WGSCN offers several other potential environmental benefits. The creation of new cycle routes can create opportunities to create more green infrastructure, e.g. planting trees or other vegetation along the route, which as well as removing CO2 and other pollutants from the air, can improve biodiversity, and manage flood risk.

3.4 Theme 3 - Access to services and opportunities

3.4.1 Leisure, education and work opportunities

The WGSCN expands on emerging LCWIP cycling networks within the region and the National Cycle Network, filling in the gaps and creating longer continuous routes. As a result, new links between communities enable a wide range of journeys for multiple purposes such as leisure, education, and work. A map of the indicative route alignments for the WGSCN can be found on Figure 5-2. Table 3-1 shows the scale of the population served by these routes.

Population Group / Destinations	No. within 1,000m of proposed WGSCN
Resident population	1,680,000
Workplace population	899,198
Key Regional Destinations	85
Train Stations	65
International Gateways	6

Table 3-1 Data demonstrating trip potential in the Western Gateway area

Over 1.6m people live within 1km of the indicative network which is ~33% of the total WGSTB population[21]. In addition, 72% of the key destinations and 100% of the international gateways in the WGSTB region are directly served by the indicative routes. The key rural tourism areas identified are also well served - 19% of the total areas is within 1000m (a five-minute cycle) of the WGSCN.

Further populations and destinations will be linked as local LCWIP networks are developed and high-quality links into the WGSCN are provided.

- **Case Study: Linking Communities grant, Sustrans, 2012-13**

£18 million (£7.5m from DfT and £10.5m match funding) was invested into the Linking Communities Programme 2012-13 across the UK. The programme's intent was to both create and improve traffic calmed and traffic-free walking and cycling routes, to enable people in 35 communities to access areas of economic activity.

One of the four intended outcomes was to: "Connect residential areas to local facilities, connect people to places of work, link people to transport hubs such as railway or bus stations and enable independent and active travel to schools, further education (FE) and higher education (HE) institutions". The Linking Communities Programme produced the following benefits:

- Commuting by foot and cycle increased by 353% from an estimated 17,039 annual trips to 77,174 trips.
- 30% of survey respondents accessed retail facilities, 22% health services and 28% transport hubs.
- A 151% increase in children using the routes to get to school, from 19,222 estimated annual trips to 48,206.

20 National Travel Survey trip distance statistics

21 western-gateway.co.uk

3.4.2 Improving access to rail

The current rail network within the Western Gateway provides good connectivity within the region and outside of it to most of the UK (Figure 3-1). There are multiple east-west routes, providing good connectivity to London and Cardiff and four north-south routes, providing connectivity cross-country. The draft WGSIP sets out priority proposals to further improve rail services and links within the region, and to improve interchange facilities at stations.

In Gear Change (2020), one of the Department for Transport's commitments was to 'make sure the railways work better with cyclists'. A strategy to invest in safe cycle routes to stations, particularly in commuter towns, and increasing cycle storage at stations was proposed. Over £2 million was invested in 2021/22 to create better access routes to stations[22].

Figure 3-1 Western Gateway & surrounding rail network

Cycling and rail use can be complimentary, providing people with high quality, flexible sustainable transport choices covering a range of distances. To maximise opportunities for people to make multi-modal journeys by cycling and rail, investment will be required in not only the WGSCN which could provide routes connecting stations but also additional infrastructure such as cycle parking/storage at stations and measures such as increased space for cycles on trains and public cycle share schemes.

- **Case Study: Access to stations programme (DfT), Various Location, UK**

From 2015, improvements to cycle access were made at 12 stations through the 'Access to Stations' Programme[23]. A variety of interventions were introduced at these stations: new cycle paths and lanes, resurfaced routes, cycle parking, lighting upgrades, pop up hubs, local school and cycling events. As a result of these measures, cycling to the stations increased.

Specifically, the interventions led to:

- A reduction of 2.4 million car trips over the course of the project.
- Change in sustainable transport use for all journeys, with an estimated increase of 1.7 million more cycling trips across the duration of the project.

3.4.3 Future Transport Zones and mobility hubs

3.4.3.1 Future Transport Zones and mobility hubs

In 2020, the Department for Transport announced £90m of funding for the creation of three Future Transport Zones (FTZs) where transport innovations will be trialled. The WEMCA was successful in receiving FTZ funding and is currently delivering a £28m programme of trial innovative mobility solutions to improve movement across the region.

The FTZ will deliver the following elements:

- Data Hub - transport data stored, modelled and then able to be visualised for future schemes and to respond to incidents for resilience. This data will inform the Mobility As A Service (MaaS) Platform.
- MaaS Platform – A one-stop-shop app where citizens can plan their journeys, receive updates on real time incidents with the ability to re-plan journeys and purchase tickets.
- Mobility hubs – these will vary in size but provide hub points to connect people to the existing public transport networks. In areas of poor connectivity, neighbourhood mobility stations could include pick up points for Digital Demand Responsive Transport (DDRT).
- DDRT – a minibus that loops around neighbourhoods to pick up passengers and drop them at their destinations or at mobility hubs where they can access a wider range of transport options, to be planned and paid for using the MaaS platform.
- Urban freight solutions - electric cargo cycles are to be trialled by the FTZ project in places like Bristol and Bath city centres, which are clean air zones. This could be enabled through freight consolidation centres, micro consolidation centres, first/last mile by e-cargo cycle (hire or otherwise) or smaller electric vans.

As WGSCN route alignments are confirmed through further investigation, integration with the FTZ focus areas will be a key consideration, enabling users to travel further if desired.

22 Cycle rail fund: awards - GOV.UK

23 Access to Stations, DfT

3.4.3.2 Mobility Hubs

A mobility hub is a space where public, shared and active travel modes are co-located. Public realm improvements are also a key feature. They provide interchange opportunities and enable cycle trips to form part of longer multi-modal journeys. Linking the WGSCN to mobility hubs will increase the trip choices for local people.

More specific features of a mobility hub typically include[24]:

- Mobility components, such as bus, rail, demand responsive transport.
- Shared mobility components, such as shared cycles, e-scooters, cargo cycle share, car share.
- Supporting mobility infrastructure, such as cycle parking, EV charging, changing facilities, cycle repair facilities, wayfinding, real time transport information.
- Non-mobility components, such as parcel lockers or drop off points, café, WiFi and device charging, community facilities, co-working or hot desking space.
- Improved public realm, including safer crossings, inclusive accessibility, waiting areas, kiosks, and play areas.
- Forming part of a network of strategically located hubs.

Mobility hubs are a relatively recent concept in the UK, but are more common in other European countries.

There are already some pilot mobility hubs live, in development or at strategy stage in the WGSTB area. See Figure 3-2[25].

The WEMCA is trialling a network of mobility hubs across the northern fringe of Bristol. The trial hubs range in size from small community based hubs that provide travel information and first and last mile connectivity to wider destinations and public transport networks, to large interchanges that provide a variety of travel options, travel information and public realm improvements.

South Western Railways has several mobility hub sites planned, one of which is at Salisbury station: a cycle hub, e-cycles, a car club vehicle, improved bus interchanges and walking and cycling routes.

Figure 3-2 Mobility Hubs planned in the WEMCA Future Transport Zone

3.4.4 Electric cycles, scooters and cargo cycles

The future of electric cycles, electric cargo cycles and electric scooters could have a significant impact on the usage of the WGSCN. These vehicles open up cycling and scooting to a wider audience, for more journey types, and longer distances.

This section will look at their potential impact on the WGSCN but also consider what other local infrastructure would be required to support electric micro-mobility.

3.4.4.1 Electric cycles

Electric cycles and electric scooters are rapidly growing in popularity. Electric cycle sales in the UK is increasing, with an estimated 180,000 electric cycles being sold in the UK in 2023[26]. 39% of UK adults in a sustainable transport survey said that a reason for buying or considering buying an electric cycle was to tackle journeys that were "too long" for a conventional bicycle[27], demonstrating a potential demand for longer distance cycle trips.

Once people can readily access an e-cycle, research shows that they have an impact on how people travel. A 2020 Norwegian study[28], found that people who bought an electric cycle increased the distance they cycled more than four times, from 2.1km to 9.2km a day. They also made more trips by cycling rather than previously driving or taking another mode (48% of trips were cycled, instead of 17% previously). In terms of the WGSCN, electric cycles are likely to mean that people are willing to cycle much further on the network, opening up more journey options. Electric cycles could therefore have a significant impact on travel mode choice and could lead to much greater rates of cycling on the WGSCN.

24 CoMoUK Mobility hub guidance _Oct 2019.pdf

25 Mobility hubs > Existing schemes and operators

26 Europe: e-cycle sales by country 2023 | Statista
27 Who uses e-cycles in the UK and why? - ScienceDirect
28 Do people who buy e-cycles cycle more? - ScienceDirect

3.4.4.2 Electric scooters

In 2020, the Department for Transport authorised rental electric scooter trials in 31 regions in the UK, including several in the WGSTB, e.g. Gloucester, Cheltenham, Bournemouth, Poole and across WEMCA. A comprehensive monitoring and evaluation programme accompanies the trials to assess the safety of electric scooters and their wider impacts. The remaining 22 active trials continue to May 2026, when consideration of more permanent legislation around electric scooters is due to be reviewed.

Assuming that electric scooter usage is permitted beyond the latest round of trials, it is reasonable to assume that scooter users would also benefit from the WGSCN. The current expectation is that electric scooter would be permitted to use cycle infrastructure. The range of an average electric scooter is between 12-15 miles but long-range electric scooters can travel 30-50 miles on a single charge, this suggests either could make a wide range of journeys using the WGSCN.

3.4.4.3 Electric cargo cycle

A cargo cycle is a cycle that has been specifically designed to carry a load, and an electric cargo cycle simply means the cargo cycle has an electric motor to help propel it along. Both are becoming more common, particularly in cities and towns with higher levels of cycling, where they are used to carry larger and heavier items, as well as children. Electric cargo cycles are a low carbon transport option, particularly popular with small businesses who need to make deliveries, offering fuel cost savings.

The UK initiated an electric-cargo cycle scheme in 2019, which was extended to 2022 and has since been evaluated. £700,000 was granted to Local Authorities over the three years, providing over 500 cycles & trailers across the country. Some areas within WGSTB benefitted, such as Bath, Bristol, North Somerset, and South Gloucestershire. Over 400 kg CO2 per electric-cargo cycle was saved annually due to the grant[29]. The WGSCN will provide strategic cycle routes between services that will further promote the use of electric-cargo cycles.

3.4.4.4 Infrastructure required to support the uptake of electric cycles and scooters

Electric cycles, cargo cycles and scooters will form an increasing proportion of the vehicles which use the WGSCN in the future. However, it is important to consider that these vehicles have different requirements to regular cycles, cargo cycles and scooters in certain key respects. Some of the recommended improvements to support the uptake of electric micro-mobility will include the following:

- Safety of users: electric cycles and scooters have the potential to travel at higher speeds than unassisted cycles; this places an increased importance on considerations such as lighting, surface quality, and wayfinding.
- Accessible design: wider or longer vehicles using the network means it should be designed to be as fully accessible as possible with wide paths or cycle tracks and appropriate bends and turns.
- Secure, accessible cycle parking: electric cycles and cargo cycles are relatively expensive so any cycle parking facilities should provide good security features. Cycle parking design should also be able to accommodate longer or wider vehicle sizes.
- Charging: charging infrastructure should be integrated into the WGSCN so that users can make journeys without having to be concerned about running out of charge. In June 2022, Sustrans and Bosch announced a partnership that will see electric cycle charging stations placed at key locations across the National Cycle Network.
- Electric cycle hire: the ability to hire electric cycles, cargo cycles, and scooters could also be integrated into the WGSCN as this would allow users to make one-way journeys and provide greater flexibility in how the network is used.

3.5 Summary of evidence base

This chapter has highlighted the strong evidence base to show the potential benefits of the WGSCN, and includes the following key findings:

- Sustainable growth and economy
  - The indicative routes in the WGSCN serve 33% of the total WG population, directly serve 72% of key destinations, 90% of WG rail stations and 100% of international gateways.
  - Key rural tourism areas are also well linked with 19% of the areas identified in the WGSTP being within 1km of the indicative WGSCN.
  - Attractive, comfortable cycle routes in tourism areas can draw visitors and boost the local economy – for example, tourism expenditure associated with three cycling routes in Devon was estimated to contribute £13.4m per year to the local economy.
- Decarbonisation and air quality
  - The WGSCN enables longer distance trips, which are typically have a greater carbon impact, to switch to cycling – making cycling an option for up to 85% of trips served by the network.
  - Providing safe convenient cycle links to transport hubs such as rail and bus stations enables mode shift for longer journeys – for example, the 2015 'Access to Stations' programme led to a reduction of 2.4 million car trips over the course of the project.
  - Integration of cycling and rail trips unlocks end-to-end trip choices for long distance journeys. As well as cycle routes to stations, additional infrastructure such as cycle parking/storage at stations and measures including increased space for cycles on trains and public cycle share schemes will be required.
- Access to services and opportunities
  - Providing suitable links between people's homes and areas of employment and key services (healthcare and education) enables substantial uplifts in trips by walking and cycling. The Linking Communities programme showed a 353% uplift in commuter tips.
  - A 2020 Norwegian study found that people who bought an electric cycle increased the distance they cycled more than four times, from 2.1km to 9.2km a day. In terms of the WGSCN, electric cycles are likely to mean that people are willing to cycle much further on the network, opening up more journey options.

29 eCargo Cycle Grant Fund 2021/22 National scheme evaluation

4 Network Planning Methodology

4.1 Network Principles

Planning for the WGSCN has focussed on linking regionally significant destinations and areas identified in the region's Strategic Transport. The destinations considered are consistent with other work within the WGSTB to ensure a common alignment with higher level strategies and planning for other modes. The key regional destinations considered comprise:

- Key settlements (populations exceeding 10,000).
- Key destinations defined in the WGSIP.
- National and international gateways (train stations, ports, and airports).
- Health facilities (hospitals, and consolidated medical centres).
- Further education sites (colleges and universities).
- Key rural tourism areas defined in WGSIP.

The network has been developed to link these destinations within the WGSTB region, as well as identifying key cross-boundary links to nearby settlements / destinations outside the WGSTB region (within a 50km buffer). Finally, direct links for cross regional connections have been developed to reflect key north-south corridors outlined in the WGSTP. Additional local connections will be planned though Local Authority LCWIPs and other policies.

4.2 Key destinations and tourism areas

A list of regionally significant destinations within Western Gateway has been identified and agreed in the Strategic Investment Plan. These include major tourist, retail, sporting, and natural destinations that typically attract at least 50,000 visitors per year.

Nine key rural tourism areas were further identified which are detailed in Section 3.2.2.

4.3 Establishing Desire Lines

The desire line network was built up in stages;

- Connecting settlements

  The core network was derived by connecting key settlements (with a population exceeding 10,000). Smaller settlements are linked to bigger settlements with a greater variety of services, and to transport hubs with onward connections nationally and internationally. The following principles guided the network development;

  – Each settlement with a population over 10,000 will connect to at least one settlement of the same size or larger.

  – Connections between two settlements with a population of 10,000 – 15,000 will be facilitated if a key destination (as identified above) is also served or if there are no larger settlements nearby.

  – Settlements under 10,000 will be connected to the WGSCN if they contain key destinations or are situated along a route between settlements with populations of over 10,000.

  – Isolated key destinations are connected to their nearest settlement.

- Key destination links

  Where links between settlements do not provide a direct link to key destinations additional desire lines were added to the network to serve these locations – these typically applied in rural tourism areas.

- Strategic connections

  The final stage of network development was to add strategically important links to ensure a coherent, well-connected network and reflect wider policy aspirations of WGSTB. This included;

  – North-south links through the Cranbourne Chase National Landscape;

  – Key links to significant destinations outside the WG boundary e.g. towards Southampton, Newbury, Oxford.

The indicative "desire line" network emerging from this process is presented in Figure 4-1. This desire line network is then aligned to existing or potential routes at the next stage.

Desire Lines

N

Legend

International Gateways

- Bournemouth International Airport
- Bristol Airport
- Southampton Port
- Poole Port
- Portland/ Weymouth Port
- key regional destinations

Building up areas (BUA) 2021 (quintiles)

- 28,000 - 425,215
- 15,000 - 27,999
- 10,000 - 14,999
- 7,170 - 9,999
- 5,000 - 7,169
- BUA >10,000 outside boundaries
- Desire Lines

Redditch
Royal Leamington Spa
Warwick
Droitwich Spa
Worcester
Stratford-upon-Avon
Great Malvern
Evesham
Hereford
Tewkesbury
Moreton-in-Marsh
Bishop's Cleeve
Newent
Ross-on-Wye
Cheltenham
Churchdown
Gloucester
Brockworth
Cinderford
Quedgeley and Hardwicke
Coleford (Forest of Dean)
Witney
Carterton
Lydney
Stroud
Chalford
Cirencester
Cam
Dursley
Nailsworth
Tetbury
Thornbury
Malmesbury
Didcot
Wantage
Newport
Yate
Swindon
Chipping Sodbury
Patchway
Portishead
Chippenham (Wiltshire)
Bristol
Clevedon
Nailsea
Long Ashton
Calne
Corsham
Marlborough
Keynsham
Thatcham
Newbury
Yatton
Bath
Melksham
Tadley
Weston-super-Mare
Bradford-on-Avon
Devizes
Trowbridge
Midsomer Norton
Basingstoke
Westbury (Wiltshire)
Ludgershall (Wiltshire)
Tidworth
Burnham-on-Sea
Frome
Andover
Wells
Warminster
Durrington
Amesbury
Bridgwater
Street
Salisbury
Winchester
Gillingham (Dorset)
Taunton
Shaftesbury
Romsey
Chandler's Ford
Eastleigh
Yeovil
Sherborne
Totton
Southampton
Chard
Verwood
Blandford Forum
Locks Heath
Hythe and Dibden Purlieu
Fareham
Ringwood
Ashley Heath
West Moors
Portsmouth
Wimborne Minster
Merley
Ferndown
Corfe Mullen
Lymington
New Milton
Christchurch
Barton on Sea
Cowes
Bridport
Poole
Bournemouth
Dorchester
Wool
Wareham
Weymouth
Swanage
Weston

This map shows the desire lines connecting the key settlements across the Western Gateway area and surroundings.

Figure 4-1 Desire Lines

0 5 10 20 Kilometers

Network Route Assessment

While the complete network forms the overall vision and aspiration for the WGSCN, an assessment has been undertaken to identify the parts of the network that offer the greatest connectivity and potential travel demand.

This assessment is not intended to indicate priorities for investment / funding. Some parts of the network already provide links of an acceptable standard requiring no further investment. Others will have substantial barriers for delivery and may be dependant on wider policy initiatives. The focus of future funding opportunities, and availability of developer contributions are uncertain. The assessment therefore is intended to provide an indication of how the WGSCN routes link to key destinations and serve potential cycling demand – it may help to support decisions on which routes to seek to progress, alongside other local considerations.

4.4 Strategic Cycle Network Routes

To undertake this assessment, indicative route alignments for each desire line have been defined. These give an initial approximation of actual route length, and the population, key destinations and national/international gateways served. They are not intended to be preferred alignments and have not been subject to any assessment of the route quality – in most cases further feasibility studies are required to determine the most favourable routing. The indicative alignments have been defined based on:

- Local Authority LCWIP networks – following routes identified locally where they match strategic desire lines.
- NCN / Other named cycle routes.
- Existing highway / Public Rights of Way (PROW) links avoiding strategic roads.
- Strategic alignments already in development.

Successive iterations of the draft WGSCN have been reviewed by local authority officers and members before being finalised.

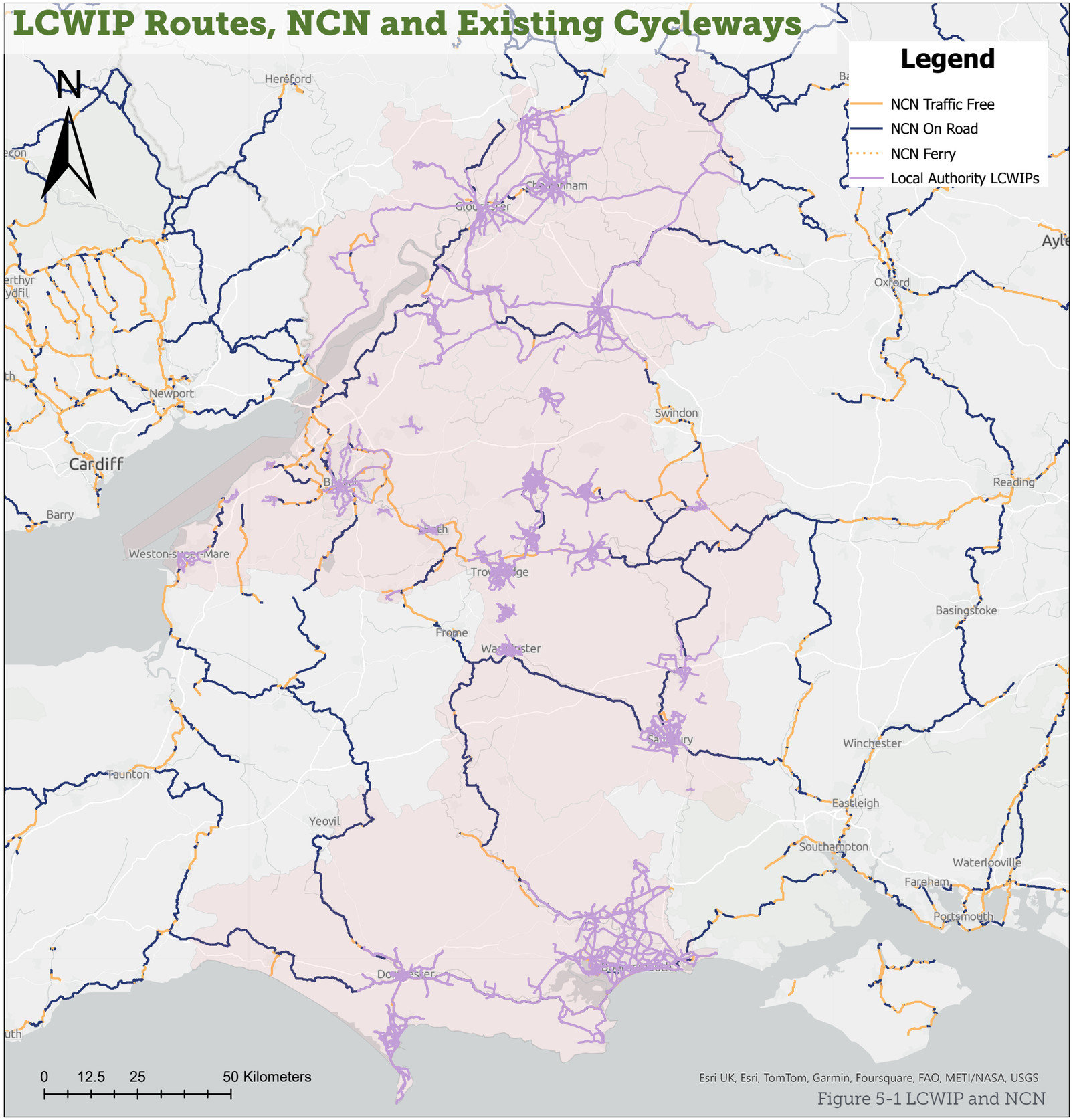


Figure 5-1 LCWIP and NCN

Indicative Strategic Cycle Network

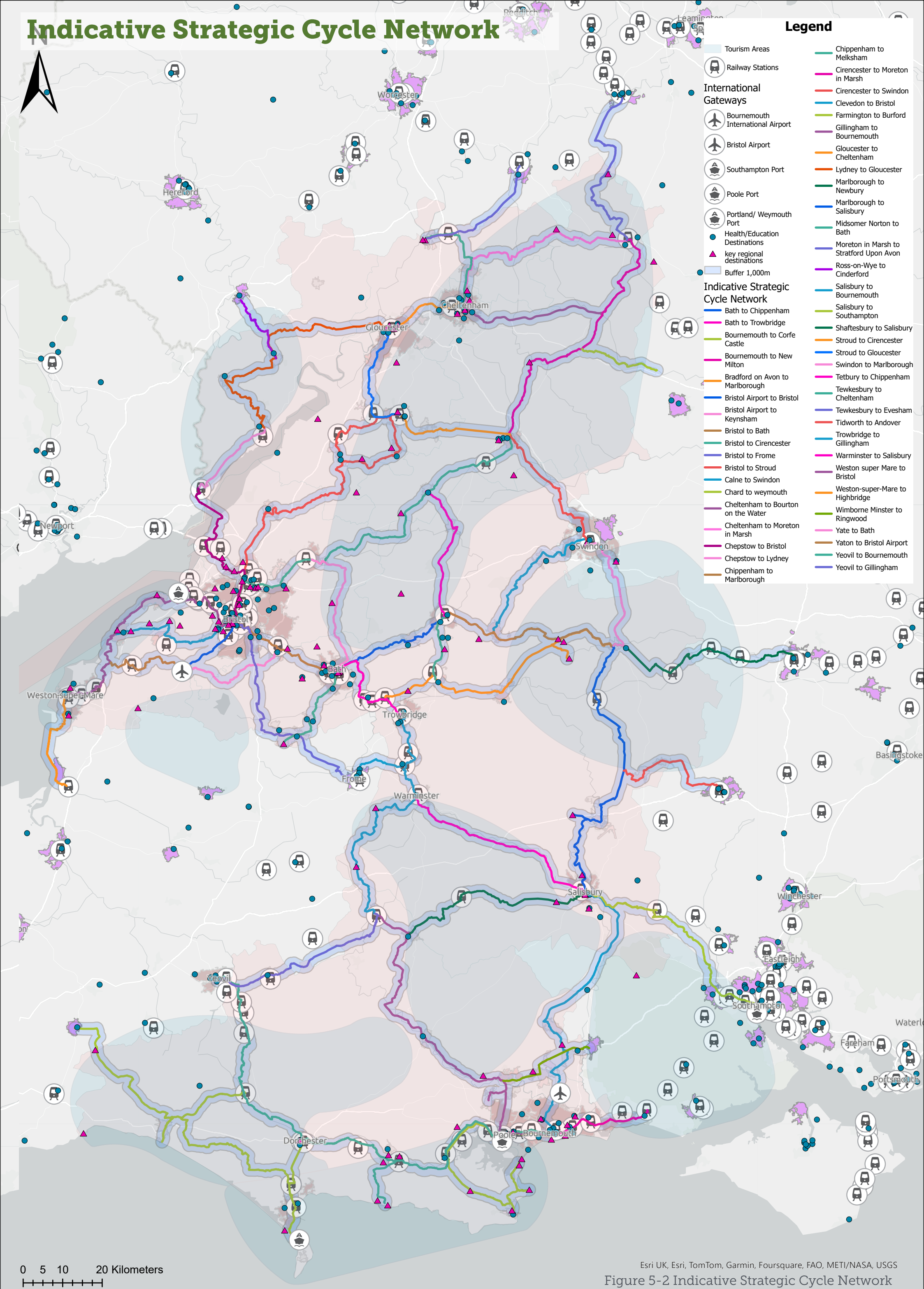


Figure 5-2 Indicative Strategic Cycle Network

4.5 Route Assessment

A robust connectivity and demand assessment methodology was used to identify which of the routes are likely to generate the most cycling demand through connecting key destinations.

A long list of assessment criteria were developed and refined through an iterative process. The following assessment criteria have been included within the final methodology:

- Residential Trip Potential: Total resident population within 1,000m of route using Census 2021 data. The results were grouped into quintiles and scores of 1-5 assigned.
- Employment Trip Potential: Total workplace population within 1,000m of route using Census 2021 data. The results were grouped into quintiles and scores of 1-5 assigned.
- Key Regional Destinations: Total number of key regional destinations within 1,000m of route (Key Regional Destinations provided by Western Gateway)
- Health/Education Destinations: Total number of sites within 1,000m of the route (based on destination tags within Open Street Map data e.g. Universities, Colleges, Hospitals)
- Tourism Area: Percentage of route overlapping with tourism areas provided by Western Gateway.
- Rail connectivity: Total score of railway stations within 1,000m of route based on Western Gateway's 'Role of Station' definition (National hub=4pts, regional hub=3pts,local hub=1pt)
- International Gateway: Total number of international gateways (ports and airports) within 1,000m of the route.
- NCN and LCWIP intersections: Number of NCN and LCWIP intersections.

The assessment criteria were analysed against the indicative WGSCN, providing an indicative score for each route. It should be noted that some of the cycle corridors with the highest assessment score have existing high quality cycle infrastructure or in some cases, plans are already in development.

Other criteria were analysed individually without being included in the final assessment. The purpose of these criteria is to allow for a criteria sift for the routes if needed, meaning they can be used as a filtering step to refine the route assessment.

The criteria are as follows:

- Cross Boundary: This applies when a route crosses a Local Authority boundary. For this analysis, Gloucestershire County and WEMCA are each considered as one Local Authorities, with North Somerset also included due to its close relationship with WEMCA authorities in transport planning.
- New Developments: The number of residents in planned new residential developments within 1,000m of the route.

Further details of the assessment process are included in Appendix 1 where a full assessment table for all routes with raw scores for each criterion can be found.

ROUTE NAME	Length (KM)	SCORE
Gloucester to Cheltenham	15.0	32
Bristol to Cirencester	66.7	30
Bristol to Bath	20.4	30
Bristol Airport to Bristol	12.5	30
Midsomer Norton to Bath	17.4	29
Weston super Mare to Bristol	49.2	29
Bournemouth to New Milton	17.2	28
Stroud to Gloucester	20.9	27
Swindon to Marlborough	22.8	26
Bristol to Stroud	77.3	26
Cirencester to Swindon	25.7	24
Tewkesbury to Cheltenham	18.4	24
Chepstow to Bristol	32.8	24
Bristol to Frome	42.5	24
Bath to Chippenham	22.5	23
Chippenham to Melksham	11.7	23
Yate to Bath	24.9	23
Bournemouth to Corfe Castle	48.8	22
Salisbury to Southampton	45.8	22
Clevedon to Bristol	25.5	22
Bath to Trowbridge	19.9	22
Weston-super-Mare to Highbridge	23.7	21
Gillingham to Bournemouth	70.5	20
Salisbury to Bournemouth	54.6	20
Calne to Swindon	27.7	20
Stroud to Cirencester	19.7	20
Tewkesbury to Evesham	20.8	18
Chepstow to Lydney	16.3	17
Lydney to Gloucester	50.3	17
Moreton in Marsh to Stratford Upon Avon	34.8	17
Yeovil to Bournemouth	103.4	17
Bradford on Avon to Marlborough	50.0	16
Chard to Weymouth	93.3	16
Cheltenham to Bourton on the Water	24.3	16
Cheltenham to Moreton in Marsh	37.2	16
Shaftesbury to Salisbury	36.4	16
Tetbury to Chippenham	24.1	16
Tidworth to Andover	23.4	16
Chippenham to Marlborough	35.9	15
Marlborough to Newbury	36.7	15
Trowbridge to Gillingham	60.5	15
Wimborne Minster to Ringwood	16.8	14
Bristol Airport to Keynsham	21.0	13
Yeovil to Gillingham	32.9	13
Cirencester to Moreton in Marsh	46.9	12
Warminster to Salisbury	34.7	11
Farmington to Burford	13.8	10
Marlborough to Salisbury	54.8	10
Ross-on-Wye to Cinderford	12.8	10
Yatton to Bristol Airport	18.3	10

5 Design principles

The WGSCN identifies key desire lines to be served by routes giving a good level of service that enables people to choose to cycle. To achieve this, it is anticipated any improvements to the network will be designed and built with consideration to the current cycle design guidance and principles, to ensure routes are coherent, safe, direct, comfortable and attractive.

A summary of the key principles of the current guidance at the time of writing (LTN 1/20 Cycle Infrastructure Design[30]) is provided to establish the underlying expectations as WGSCN routes are developed. LTN 1/20 applies for all routes. Whilst these national design guidelines and principles set the aspiration for the quality of routes within the WGSCN, each Local Authority will have responsibility for overseeing improvements to their network in line with their established design assurance processes.

Summary Principles from LTN 1/20

1. Cycle infrastructure should be accessible to everyone from 8 to 80 and beyond: it should be planned and designed for everyone. The opportunity to cycle in our towns and cities should be universal.
2. Cycles must be treated as vehicles and not as pedestrians. On urban streets, cyclists must be physically separated from pedestrians and should not share space with pedestrians. Where cycle routes cross pavements, a physically segregated track should always be provided. At crossings and junctions, cyclists should not share the space used by pedestrians but should be provided with a separate parallel route.
3. Cyclists must be physically separated and protected from high volume motor traffic, both at junctions and on the stretches of road between them.
4. Side street routes, if closed to through traffic to avoid rat-running, can be an alternative to segregated facilities or closures on main roads – but only if they are truly direct.
5. Cycle infrastructure should be designed for significant numbers of cyclists, and for non-standard cycles. Our aim is that thousands of cyclists a day will use many of these schemes.
6. Consideration of the opportunities to improve provision for cycling will be an expectation of any future local highway schemes funded by Government.
7. Largely cosmetic interventions which bring few or no benefits for cycling or walking will not be funded from any cycling or walking budget.
8. 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.
9. Cycle parking must be included in substantial schemes, particularly in city centres, trip generators and (securely) in areas with flats where people cannot store their bikes at home. Parking should be provided in sufficient amounts at the places where people actually want to go.
10. Schemes must be legible and understandable.
11. Schemes must be clearly and comprehensively signposted and labelled.
12. Major 'iconic' items, such as overbridges must form part of wider, properly thought-through schemes.
13. As important as building a route itself is maintaining it properly afterwards.
14. Surfaces must be hard, smooth, level, durable, permeable and safe in all weathers.
15. Trials can help achieve change and ensure a permanent scheme is right first time. This will avoid spending time, money and effort modifying a scheme that does not perform as anticipated.
16. Access control measures, such as chicane barriers and dismount signs, should not be used.
17. The simplest, cheapest interventions can be the most effective.
18. Cycle routes must flow, feeling direct and logical
19. Schemes must be easy and comfortable to ride.
20. All designers of cycle schemes must experience the roads as a cyclist.
21. Schemes must be consistent.

Core design principles

The five core design principles (Summarised in Figure 6-1) represent the essential requirements to achieve more people travelling by cycle, based on best practice both internationally and across the UK.

Rural design principles

The design guidance within LTN 1/20 has an urban focus, and Active Travel England (ATE) are developing further guidance to aid interpretation of the principles in a rural setting. Much of the WGSCN focus will be on rural routes connecting mostly urban links identified within LCWIPs.

This rural guidance is currently in development; however, the following considerations are likely to be relevant when developing and designing rural routes within the WGSCN:

- User numbers may mean paths shared by cyclists and pedestrians (separated from traffic) are often appropriate.
- There may be opportunities to provide active travel routes alongside major road and rail routes to provide connectivity in challenging areas, subject to appropriate separation from traffic. Such routes may have a less attractive environment, but can provide smoother gradients, make use of key connections such as bridges etc. to overcome severance without lengthy detours and allow for cost effective route delivery
- On other rural routes where cycling provision is less likely to be segregated from vehicular traffic, measures to manage vehicle speed and volume may be a focus to make sharing the carriageway safe and comfortable.
- Quiet lanes and byways may be considered where feasible.
- High quality, accessible wayfinding will be important on longer distance routes in rural areas.
- Surfacing and lighting will need to be appropriate for a rural setting - particularly for off-road routes. Balancing the level of service vs environmental and practical constraints will be a key consideration as alignments / options are finalised.

30 Local Transport Note (LTN) 1/20

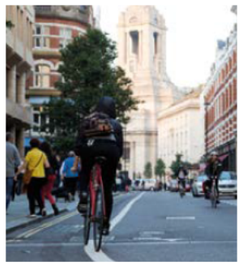
Accessibility for all				
Coherent	**Direct**	**Safe**	**Comfortable**	**Attractive**
				
DO Cycle networks should be planned and designed to allow people to reach their day to day destinations easily, along routes that connect, are simple to navigate and are of a consistently high quality.	**DO** Cycle routes should be at least as direct – and preferably more direct – than those available for private motor vehicles.	**DO** Not only must cycle infrastructure be safe, it should also be perceived to be safe so that more people feel able to cycle.	**DO** Comfortable conditions for cycling require routes with good quality, well-maintained smooth surfaces, adequate width for the volume of users, minimal stopping and starting and avoiding steep gradients.	**DO** Cycle infrastructure should help to deliver public spaces that are well designed and finished in attractive materials and be places that people want to spend time using.
				
DON'T Neither cyclists or pedestrians benefit from unintuitive arrangements that put cyclists in unexpected places away from the carriageway.	**DON'T** This track requires cyclists to give way at each side road. Routes involving extra distance or lots of stopping and starting will result in some cyclists choosing to ride on the main carriageway instead because it is faster and more direct, even if less safe.	**DON'T** Space for cycling is important but a narrow advisory cycle lane next to a narrow general traffic lane and guard rail at a busy junction is not an acceptable offer for cyclists.	**DON'T** Uncomfortable transitions between on-and off carriageway facilities are best avoided, particularly at locations where conflict with other road users is more likely.	**DON'T** Sometimes well-intentioned signs and markings for cycling are not only difficult and uncomfortable to use, but are also unattractive additions to the street scape.

Figure 6-1 Core Design Principles LTN 1/20

6 Next Steps

6.1 Scheme development

The entire network must be delivered for WGSTB to meet their strategic goals to improve connectivity to promote sustainable growth and decarbonise the transport network.

Whilst the route assessment has shown which routes are likely to support the most cycling demand based on a data led approach, it does not constitute a recommendation for investment priorities in individual routes. Parts of the network (e.g. Gloucester-Cheltenham) are already at an advanced stage of completion compared to other routes. Some of the routes could be delivered in short timescales with minimal planning or further work required - 'Quick Wins'. These schemes will generally be lower cost but may also be lower impact. On the other hand, some of the schemes which will have the greatest impact may require negotiations with third party landowners, planning applications and a detailed design process. As such, they will need multiple years to deliver.

In most cases, preferred route alignments are not defined and require further feasibility studies to determine the most favourable routing.

The route assessment presented may complement wider decisions on scheme prioritisation by;

- Highlighting those routes with a strong regional connectivity value;
- Highlighting gaps in existing network – particularly cross boundary) where additional links could complete longer routes; and
- Highlighting longer routes serving strategic development locations.

6.2 Stakeholder and community engagement

To enable successful delivery of any of the routes it is paramount that engagement with stakeholders is undertaken at an early stage. Detailed stakeholder sessions would be advisable with the major landowners affected, as well as the Highway Authorities to flag any key issues which may arise from the proposed alignment.

Input from members of the local communities will assist in devising an optimal solution for each location.

Local stakeholders may include but are not limited to:

- Landowners on the route.
- Landowners adjacent to the route.
- Local residents.
- Local businesses.
- Local walking, cycling and other interest groups in the area, plus local representatives of national organisations such as Cycling UK.
- British Horse Society.
- Local disability forum.
- Local authorities.
- Local politicians at all levels - Parish Councillor to MP.
- Statutory Interests.

6.3 Delivery Opportunities

The WGSCN will be delivered in parts over time. Delivery opportunities are likely to be varied and include;

- Central government investment programmes (e.g. Cycling and Walking Investment Strategy, Consolidated Active Travel Fund, City Region Sustainable Transport Settlements);
- Coordinated delivery alongside other programmes (e.g. Strategic Road Network / Major Road Network improvements)
- Developer improvements to facilitate new development.

The STB has role to help coordinate investment and support delivery of cross-boundary or missing links that expand the reach and impact of locally delivered improvements. The first stage of this will be to work with LA partners to agree a route development programme identifying where WG support can best be focussed. A complementary report identifying options for progressing the highest priority routes can be seen on https://westerngatewaystb.org.uk/cycling/ .

7 APPENDIX

Appendix 1 Route assessment table

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Route	Length (KM)	Total Workplace Population within 1,000M Per KM		Total Resident Population Within 1,00M Per KM		Total Number Of NCN nd LCWIP Intersections Per KM		Number Of Health/ Education Destinations Within 1,00M Per KM		Percentage in Tourism Area		Total Number of Key Regional Destinations within 1,000M per KM		Total Number International Hub		Total Number of Train Stations Within 1,000M per KM		TOTAL	LA Boundary Cross	STB Boundary Cross	New Residential Developments	
		Results	Score	Results	Score	Results	Score	Results	Score	Results	Score	Results	Score	Results	Score	Results	Score		Results	Results	Results	Score
Gloucester to Cheltenham	15.0	4284.3	5	6241.9	5	0.20	5	0.74	5	46.47	2	0.33	5		0	0.401	5	32	No	No	5408.0	5
Bristol to Cirencester	66.7	1744.9	5	2473.7	5	0.12	4	0.41	5	65.28	3	0.20	4		0	0.180	4	30	No	Yes	5680.0	5
Bristol to Bath	20.4	2031.3	5	3290.3	5	0.39	5	0.98	5	0	0	0.64	5		0	0.539	5	30	No	No	3220.0	4
Bristol Airport to Bristol	12.5	1883.8	5	3522.4	5	0.40	5	0.96	5	0	0	0.48	5		2	0.160	3	30	No	No	2902.0	4
Midsomer Norton to Bath	17.4	1076.0	4	2709.0	5	0.29	5	0.40	5	0	0	0.29	5		0	0.288	5	29	No	No	1043.0	2
Weston super Mare to Bristol	49.2	888.6	4	2100.8	4	0.10	3	0.43	5	68.41	4	0.26	5		0	0.203	4	29	No	No	1380.0	3
Bournemouth to New Milton	17.2	2425.5	5	5848.9	5	0.12	3	0.46	5	38.27	2	0.14	3		0	0.348	5	28	Yes	Yes	7497.0	5
Stroud to Gloucester	20.9	1817.9	5	3612.5	5	0.14	4	0.29	4	31.05	1	0.19	4		0	0.239	4	27	No	No	6857.0	5
Swindon to Marlborough	22.8	584.2	3	1575.4	4	0.18	4	0.18	3	86.56	4	0.19	4		0	0.175	4	26	Yes	Yes	175.0	1
Bristol to Stroud	77.3	1299.7	5	2373.5	5	0.12	3	0.32	4	34.5	2	0.17	4		0	0.129	3	26	No	Yes	5402.0	5
Cirencester to Swindon	25.7	1355.9	5	3276.9	5	0.12	3	0.16	3	42.93	2	0.11	3		0	0.155	3	24	Yes	Yes	457.0	1
Tewkesbury to Cheltenham	18.4	501.1	3	776.7	3	0.22	5	0.27	4	47.4	3	0.27	5		0	0.054	1	24	No	No	2928.0	4
Chepstow to Bristol	32.8	510.7	3	594.2	1	0.21	5	0.58	5	0	0	0.42	5		0	0.274	5	24	Yes	Yes	2799.0	4
Bristol to Frome	42.5	2005.2	5	2939.4	5	0.12	3	0.33	4	0	0	0.20	4		0	0.141	3	24	Yes	Yes	541.0	2
Bath to Chippenham	22.5	294.4	2	642.7	2	0.31	5	0.22	4	25	1	0.18	4		0	0.311	5	23	No	Yes	2735.0	4
Chippenham to Melksham	11.7	400.5	3	803.8	3	0.26	5	0.34	5	0	0	0.09	2		0	0.342	5	23	No	No	2323.0	3
Yate to Bath	24.9	1267.1	5	2119.9	4	0.08	1	0.12	2	64.44	3	0.24	4		0	0.201	4	23	No	No	516.0	2
Bournemouth to Corfe Castle	48.8	274.1	2	619.6	2	0.08	2	0.14	3	78.82	4	0.16	3		2	0.164	4	22	Yes	Yes	12522.0	5
Salisbury to Southampton	45.8	910.3	4	1598.5	4	0.07	1	0.09	2	25.68	1	0.10	3		2	0.240	5	22	Yes	Yes	407.0	1
Clevedon to Bristol	25.5	430.3	3	929.8	3	0.24	5	0.71	5	26.39	1	0.47	5		0	0.000	0	22	No	No	3824.0	4
Bath to Trowbridge	19.9	366.8	2	871.7	3	0.15	4	0.20	4	0	0	0.20	4		0	0.402	5	22	No	Yes	204.0	1
Weston-super-Mare to Highbridge	23.7	839.0	4	1666.0	4	0.08	2	0.13	2	37.08	2	0.15	3		0	0.169	4	21	Yes	Yes	513.0	2
Gillingham to Bournemouth	70.5	918.1	4	1659.6	4	0.09	2	0.14	3	21.98	1	0.04	1		2	0.128	3	20	No	Yes	18845.3	5
Salisbury to Bournemouth	54.6	999.9	4	2150.8	4	0.09	2	0.15	3	0	0	0.11	3		2	0.110	2	20	Yes	Yes	5290.0	5
Calne to Swindon	27.7	735.7	4	1449.6	4	0.11	3	0.18	4	0	0	0.10	2		0	0.145	3	20	Yes	Yes	478.0	2
Stroud to Cirencester	19.7	295.7	2	621.5	2	0.20	5	0.25	4	100	5	0.05	1		0	0.051	1	20	No	No	464.0	1
Tewkesbury to Evesham	20.8	398.4	3	935.0	3	0.14	4	0.05	1	0	0	0.26	5		0	0.096	2	18	Yes	Yes	1715.0	3
Chepstow to Lydney	16.3	249.7	1	616.6	2	0.12	4	0.06	2	96.23	5	0.00	0		0	0.123	3	17	Yes	Yes	3604.0	4
Lydney to Gloucester	50.3	255.0	2	602.1	2	0.10	3	0.14	3	67.37	4	0.06	2		0	0.060	1	17	No	No	4163.0	4
Moreton in Marsh to Stratford Upon Avon	34.8	388.9	3	575.9	1	0.11	3	0.09	2	49.58	3	0.11	3		0	0.115	2	17	Yes	Yes	317.0	1
Yeovil to Bournemouth		165.9	1	260.6	1	0.05	1	0.14	3	64.49	3	0.06	2		2	0.213	4	17	Yes	Yes	16687.0	5
Bradford on Avon to Marlborough	50.0	369.4	2	763.1	3	0.12	4	0.02	1	52.21	3	0.08	2		0	0.040	1	16	No	No	1514.0	3
Chard to Weymouth	93.3	288.8	2	707.6	2	0.05	1	0.04	1	91.88	5	0.05	1		2	0.075	2	16	Yes	Yes	3099.3	4
Cheltenham to Bourton on the Water	24.3	316.4	2	613.5	2	0.08	2	0.21	4	100	5	0.04	1		0	0.000	0	16	No	No	401.0	1
Cheltenham to Moreton in Marsh	37.2	229.3	1	683.0	2	0.08	1	0.16	3	100	5	0.13	3		0	0.027	1	16	No	No	1563.0	3
Shaftesbury to Salisbury	36.4	172.8	1	308.6	1	0.11	3	0.08	2	86.7	5	0.08	2		0	0.110	2	16	No	Yes	4440.0	5
Tetbury to Chippenham	24.1	349.6	2	709.0	2	0.08	2	0.08	2	95	5	0.00	0		0	0.125	3	16	No	Yes	1830.0	3
Tidworth to Andover	23.4	925.6	4	1442.9	4	0.04	1	0.21	4	35.04	2	0.00	0		0	0.043	1	16	Yes	Yes	1772.0	3

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Chippenham to Marlborough	35.9	449.9	3	970.5	3	0.08	2	0.03	1	56.11	3	0.06	1		0	0.083	2	15	No	No	1249.0	2
Marlborough to Newbury	36.7	442.3	3	729.4	2	0.05	1	0.05	1	72.63	4	0.00	0		0	0.163	4	15	Yes	Yes	175.0	1
Trowbridge to Gillingham	60.5	585.3	3	1286.3	3	0.08	2	0.13	2	27.23	1	0.04	1		0	0.132	3	15	Yes	Yes	2102.0	3
Wimborne Minster to Ringwood	16.8	1037.5	4	2049.5	4	0.12	3	0.06	1	0	0	0.06	2		0	0.000	0	14	Yes	Yes	1254.0	2
Bristol Airport to Keynsham	21.0	378.2	2	871.3	3	0.19	4	0.05	1	0	0	0.00	0		2	0.048	1	13	No	No	1215.0	2
Yeovil to Gillingham	32.9	628.1	4	1157.7	3	0.09	2	0.12	2	0	0	0.00	0		0	0.091	2	13	Yes	Yes	3617.3	4
Cirencester to Moreton in Marsh	46.9	142.4	1	279.5	1	0.09	2	0.04	1	100	5	0.02	1		0	0.021	1	12	No	No	600.0	2
Warminster to Salisbury	34.7	130.2	1	360.7	1	0.06	1	0.09	2	64.43	3	0.06	1		0	0.115	2	11	No	No	2368.0	3
Farmington to Burford	13.8	43.3	1	67.4	1	0.14	4	0.00	0	84.38	4	0.00	0		0	0.000	0	10	Yes	Yes	0.0	0
Marlborough to Salisbury	54.8	246.3	1	551.3	1	0.05	1	0.04	1	43.48	2	0.07	2		0	0.073	2	10	No	No	1331.0	3
Ross-on-Wye to Cinderford	12.8	196.0	1	426.7	1	0.08	1	0.16	3	79.77	4	0.00	0		0	0.000	0	10	Yes	Yes	729.0	2
Yatton to Bristol Airport	18.3	228.4	1	488.0	1	0.16	4	0.00	0	8.63	1	0.00	0		2	0.055	1	10	No	No	320.0	1