

March 2014



Local Transport Plan 2011 - 2026

Cycling Strategy:

Bridging Gaps, Overcoming
Barriers & Promoting Safer Cycling

LET'S
LOOK
OUT
FOR EACH OTHER

THINK

Supported by the Local Sustainable Transport Fund
Improving your journey in greater Reading

www.reading-travelinfo.co.uk



Reading
Borough Council

Working better with you

CONTENTS

	OUR STRATEGY	2
1	INTRODUCTION	3
2	BENEFITS OF CYCLING	6
3	LOCAL POLICY CONTEXT	10
4	ENCOURAGING CYCLING	14
5	EVALUATION	37
6	PARTNERSHIP, CONSULTATION & COMMUNITY ENGAGEMENT	40
7	FUNDING	43
8	IMPLEMENTATION	45
	APPENDIX A - TECHNICAL DRAWINGS	47
	Drawing No.	
001	Shared-Use Sign with Additional Text	
002	Route Number Road Markings	
003	Cycle Lanes at Junction	
004	Cycle Lanes at Traffic Islands	
005	Cycle Symbols at Traffic Islands	
006	Cycle Lane without Centre Line	
007	Advanced Stop Line with Lead-In	
008	Advanced Stop Line at Junction	
009	Contra-Flow Cycle Lane with One-Way 'Plug'	
010	Cycle Lanes at Parking Bays	
011	Cycle Symbols at Parking Bays	
	REFERENCES	59

OUR STRATEGY

Our Cycling Strategy 2014 has been written to build on the achievements of our first Strategy adopted in 2008¹ and of our successful £25.6 million Local Sustainable Transport Fund award to deliver a range of transport improvements, including more and better cycling facilities and support and encourage more people to take up cycling.²

Cycling is one of the key strategies outlined in our third Local Transport Plan (LTP3) offering many benefits locally and nationally, including contributing to improved air quality, reduced noise pollution, healthier lives and less congestion.³

Whether cycling for leisure, to work, to school or within your local neighbourhood, we aim to provide a variety of facilities along both quiet roads and busy distributor routes. The design of these routes will reflect best practice and local constraints of a compact urban area; reallocating road-space for cycle lanes where possible, improving aids to way-finding, substantially increasing cycle parking and redesigning junctions to give cyclists more priority.

We plan to launch a public bicycle hire scheme in Spring 2014, open the underpass between Napier Road and Kenavon Drive by Summer 2014, open a cycle parking hub at Reading Station that doubles the number of cycle parking spaces by Winter 2014 and complete a shared bridge over the River Thames for pedestrians and cyclist by Summer 2015.

We will also continue to work in partnership with organisations including Sustrans, CTC - the national cycling charity, our colleagues in public health and Thames Valley Police to deliver events, training and other incentives to help people confidently choose cycling. We are committed to engaging with people in their neighbourhoods, where cycling starts.

By April 2015, we envisage 2,300 additional cycle trips every day compared to the 2011 baseline. By the time we are writing our next Cycling Strategy in five years time, we aim to double the percentage of people cycling to work to 6% and particularly increase cycling to the town centre and other local destinations including schools and neighbourhood centres. By 2025, we hope to meet the target proposed by the All-Party Parliamentary Report 'Get Britain Cycling' of 10% of all journeys being made by bicycle.⁴

Reading can already boast of a strong, local culture of walking and very high levels of public transport use. Our ambition is to create a culture where cycling is a safe, attractive and a normal travel choice as we continue to deliver cycle training, incentives and events, whilst also achieving the quality standards of cycling facilities set out in this document.



Cllr Tony Page
Lead Councillor Strategic Environment,
Planning & Transport
Deputy Leader of the Council

1. INTRODUCTION

Reading Borough Council is committed to delivering a high-quality, best value approach to transport provision as outlined in the Cycling Strategy 2008¹ and current Local Transport Plan 2011-2026 (LTP3).² We are also committed to further developing the branded cycle routes designated over the last five years. The LTP3 outlines our core enabling policies which help identify and deliver schemes focussed around four delivery themes; inclusion, intervention, infrastructure and innovation. These themes are also closely aligned to our Sustainable Community Strategy; People, Place and Prosperity.⁵

Achievements since 2008

The current Cycling Strategy¹ was adopted in 2008 as part of the Local Transport Plan 2⁶ (LTP2) and was then incorporated into LTP3.³

It set out to develop a network of colour-coded cycle routes modelled on the Premier Bus network and to produce a series of marketing materials including signs, colour-coded vinyl signs and route maps. This work is now complete and has seen the production of seven individual route maps, the overall network map 'Cycling in Reading' and other promotional materials. These materials have been distributed to key destinations including schools, workplaces and public services such as sports centres, libraries and GP surgeries to promote the routes and encourage more people to cycle. Updated editions have also been produced as they have evolved over time and in view of feedback received. Route improvements have focussed on improving conditions for cycling such as better lighting, improved connectivity and the reallocation of road space through the installation of cycle lanes and Advanced Stop Lines.

Cycling and its benefits have been promoted on roadside Variable Message Signs (VMS) and this has included Bike Week and workplace cycle challenge events delivered by Challenge for Change. The CTC Cycle Champions programme funded by the Big Lottery enabled the set-up of cycle sessions for people with a variety of needs, including those with disabilities or health issues. These sessions have continued run and are supported by the current CTC programme which focuses on promoting cycling as a form of transport.

Bikeability was introduced to Reading's schools in 2009 with more and more children being trained each year. Bikeability provides a three stage training programme for children who want to learn how to cycle safely on-road. Over 1500 children have taken part since 2009 at schools and holiday courses across Reading. Level 3 is also available to adults who want to learn how to cycle on busy roads and through complex junctions, including roundabouts.

The Way Forward

We aspire to build on the 2008 Cycling Strategy¹ and Britain's 2012 Olympic cycling events by encouraging people to cycle to work, for leisure purposes and everyday journeys such as those made within neighbourhoods to schools, shops and healthcare services.

This will be achieved through:

- new and improved cycle infrastructure that will aim to bridge gaps between existing barriers, including the railway and River Thames
- cycle hire will give people that do not currently have access to a bicycle the opportunity to cycle to key destinations
- increased cycle parking facilities to enable people to park closer to more key destinations
- positively promoting the benefits of cycling in a compact urban area such as Reading. For example: being able to cycle from east to west Reading in around 25 minutes and north to south in around 45 minutes.

A series of community engagement events will be held within local neighbourhoods with the aim of giving people who do not currently cycle or do so infrequently the opportunity to inform the Council what would encourage them to cycle or cycle more within their local neighbourhood.

Existing partnerships will be strengthened to improve the safety of cyclists and other road users and connect cycle routes with cycle facilities and destinations in neighbouring boroughs.

This will also be supported with initiatives and interventions aimed at increasing the awareness of cyclists and promoting cycling such as the national Think! Cyclist campaign, that encourages road users to look out for each other. Broader campaigns promoting walking, cycling and public transport will be delivered to encourage people living within the Greater Reading area to consider travelling by these modes.

Cycling is one of the key strategies outlined in our third Local Transport Plan (LTP3)³ offering many benefits locally and nationally, including contributing to improved air quality, reduced noise pollution, healthier lives and less congestion. These benefits are set out in Section 2 of this document and are followed by information on our Local Transport Plan and Local Sustainable Transport Fund² programme in Section 3.

Infrastructure improvements will be delivered through a series of design principles set out in Section 4. This is followed by the identification of monitoring tools and consultation and community engagement processes in Sections 5 and 6. Finally, Sections 7 and 8 set out how schemes delivered under this strategy will be funded and the process for identifying and implementing cycling improvements. Technical drawings illustrating typical road layouts are included in Appendix A. The Strategy is supported by references to national guidance and research, the details of which are included at the end of this document after Section 8.

Future Updates

This strategy is a live document spanning a five-year period until 2019 that considers national guidance and influential policy, including Local Transport Notes Cycle Infrastructure Design 02/08⁷, Shared Use Routes for Pedestrians and Cyclists 01/12⁸, Design Manual for Roads and Bridges⁹, Manual for Streets 2¹⁰ as well as the recently published All-Party Parliamentary Cycling Group report 'Get Britain Cycling'.⁴ This strategy will consider future policy changes and funding opportunities aimed at improving cycle facilities and encouraging more people to cycle.

2. BENEFITS OF CYCLING

The Transport White Paper, 'Creating Growth, Cutting Carbon - Making Sustainable Local Transport Happen' (DfT, 2011) identifies three objectives to which cycling contributes:

- creating economic growth
- cutting carbon emissions
- improving health¹¹

These are also highlighted in the 2013 All-Party Parliamentary Cycling Group (APPCG) report, 'Get Britain Cycling', which acknowledges key evidence based around these themes and offers recommendations to encourage increased cycle use.⁴ The National Institute for Health and Clinical Excellence (NICE) builds on this by highlighting that cycling can fit into peoples' daily lives as a low-cost and reliable form of transport and physical activity.¹² Cycling is a mode of transport that benefits people of all age groups, including those considering cycling in later life with the aim of remaining independent.

We acknowledge the ambition to work towards the recommended target outlined in the All-Party Parliamentary Report 'Get Britain Cycling' of 10% of all journeys by 2025.⁴

Creating Economic Growth

The health benefits associated with cycling saves the economy £128m per year as a result of cyclists taking fewer days sick compared to non-cyclists.¹³ Cycling also offers additional options for community/business travel and improves productivity by up to 30%.¹⁴ As a low cost mode of transport, cycling can help improve accessibility for the unemployed to key destinations including employment centres, offering an alternative means of private transport. Shifting from private car to cycling can also help reduce congestion which has a negative impact on local economy, causing slower and less reliable journey times. Also, there is evidence that people who walk, cycle or use public transport spend more, thus contributing to the local economy.¹²

In the national Census 2011, Reading ranked 50th in the number of people aged 16 to 74 who cycle to work out of the 348 local authorities across England and Wales. The same data revealed that 2.8% of Reading's population cycles to work ranking us 7th out of our 16 statistically significant neighbours. This is in comparison to 7.4% of trips in York (1st), 4.9% in Bristol (2nd), 4.5% in Portsmouth and 3.7% in Peterborough (4th). The number of people cycling to work in other Berkshire authorities ranged between 1.5% in Slough to 1.8% in West Berkshire.¹⁵

The National Travel Survey 2012 revealed that 56% of car journeys are less than 5 miles and 20% of all trips are less than 1 mile. Therefore, there are opportunities to increase the number of cycle trips made by targeting some of the 30.5% of people in Reading who currently drive to work, even though this is the third lowest in the south-east region for car journeys out of 67 local authorities.¹⁶

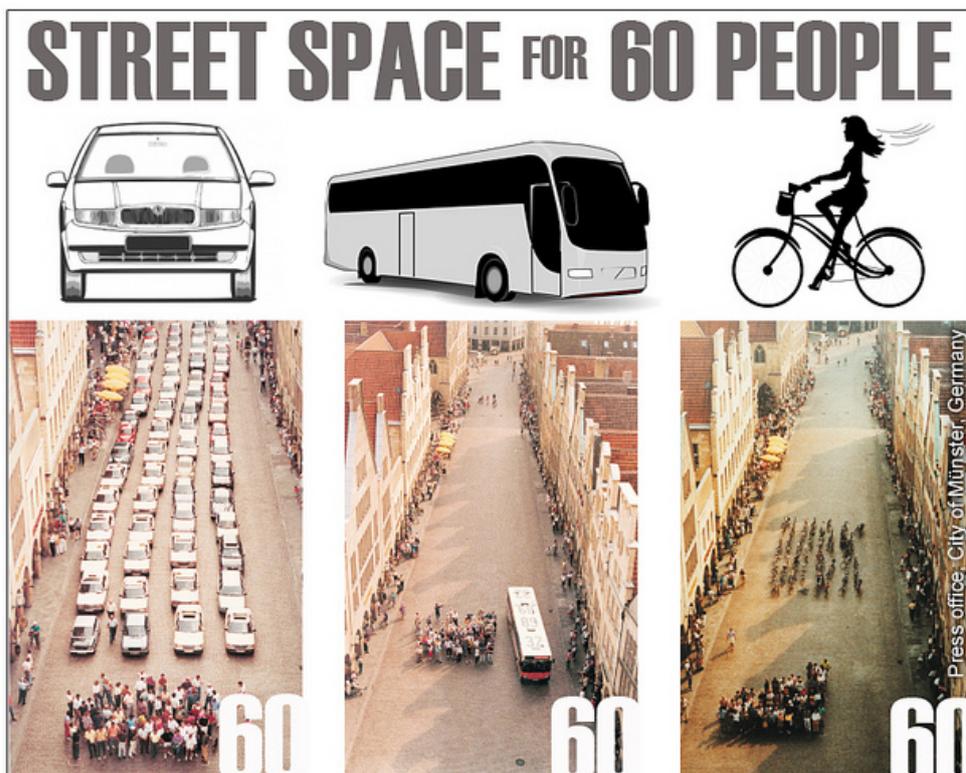
Reading's colour-coded routes encourage people to cycle for local journeys, particularly those under 5 miles, by connecting key destinations such as local centres, schools and leisure facilities to the cycle network. The branded signs and route maps support this objective by providing people with improved information on the time that it will take to cycle these journeys. The route maps include other information such as the location of cycle parking and gradients cyclists will encounter along the route.

We will aspire to double the percentage of people cycling to work to 6% based on 2011 Census data by targeting short car journeys.¹⁵

Cutting Carbon Emissions

Cycling plays a key role in reducing carbon emissions and thus climate change by shifting trips from the private car to this low carbon mode. The DfT reported in the Transport White Paper, 'Creating Growth, Cutting Carbon - Making Sustainable Local Transport Happen', that 'trips of less than 10 miles account for 40% of the United Kingdom's domestic transport emissions, with trips in the 2 to 5 mile category contributing 40% of these emissions'.¹¹ In addition, shifting from private car to a bicycle reduces congestion on the road network which in turn improves road safety and results in more reliable journey times for all road users.

Not only do bicycles take up significantly less space than private vehicles as illustrated by the City of Munster, Germany campaign (below) in the 'Get Britain Cycling' report⁴, but they also benefit from more reliable journey times due to their size and ability to navigate through congested roads as well as causing less damage to carriageway surfaces.



Improving Health

There is increasing evidence to support the growth of cycling as a form of physical activity and mitigate the negative impacts of motorised transport such as poor air quality and noise. A study undertaken by the Chief Medical Officer estimates that around 65% of men and 75% of women do not carry out the level of daily physical activity recommended.¹² As a result, physical inactivity has a significant impact on costs to the NHS, lost productivity and the death of people of working age.

Reduced risk of chronic diseases, including diabetes and heart disease are some of the health benefits of cycling as well as stress and weight management. Increased physical activity in later life is believed to help people 'maintain independence by retaining the ability to carry out activities of daily life, reducing the risk of falling and improving mood and cognitive function'.¹² Cycling can also help increase independence during later life and among disadvantaged groups such as those suffering from health issues, including disabilities.

The health benefits associated with cycling often have a more significant impact on transport appraisals than the traditional time saving measure. Health benefits of cycling were estimated to be around 70% of the total benefits for Cycling Demonstration Towns. The World Health Organisation has developed a Health Economic Assessment Tool (HEAT) to evaluate the health benefits of walking and cycling schemes.¹⁷ This tool generally produces Benefits to Cost Ratios of around 4:1, illustrating that for every £1 spent on cycling there is £4 of benefits or higher.⁴ This ratio relates only to the health benefits of cycling in terms of reduced mortality.

The overlap between health and transport outcomes, and targets, was recognised in the Local Sustainable Transport Fund governance approach with public health officers sitting on the Steering Group. The integration of public health within local authorities provides further opportunities to embed travel behaviour change into the public health function and vice versa when considering transport scheme options. This is exemplified by the joint working between public health and transport officers in drafting Reading's 2013/14 Joint Strategic Needs Assessment and public health officers' involvement in reviewing active travel proposals and policies.

The integration of cycling into everyday life can help achieve health outcomes, and reduce associated healthcare costs, through more active lifestyles. To this end:

Public health, medical and transport professionals will take an integrated approach to the delivery of active travel measures under the auspices of bodies such as the Health and Wellbeing Board.

Recent NICE guidance recognises the need to improve walking and cycling networks to facilitate increases in these modes and support the local economy.¹² Attractive routes can help support social inclusion and interaction within neighbourhoods by reducing road danger and the perception of road danger.

To encourage these positive behaviours it will be necessary to engage residents through a series of activities, such as cycling sessions targeting different groups including families, people with disabilities and employees at their place of work.

Reading is currently running a community engagement project in partnership with Sustrans from 2013 to 2014, the aim of which is to identify walking and cycling improvements in South Reading, called 'Pocket Places for People'. Measures will involve both temporary and permanent interventions. If successful, similar projects will be considered in other local neighbourhoods.

GP Surgeries will also be encouraged to promote cycling as a form of physical activity to help improve the health of people living and working in Reading. This will include providing appropriate information to GPs, the promotion of local branded and national cycle routes, 'Cycling for Health' sessions and facilitating cycling to their premises through the installation of cycle parking for patients, staff and visitors.

3. LOCAL POLICY CONTEXT

This Strategy has been developed in the context of local policies and plans relating to transport and other key service areas. This section outlines the relationship with other key documents such as the Sustainable Community Strategy⁵ and third Local Transport Plan, plus supporting sub-strategies.³

Sustainable Community Strategy

The Sustainable Community Strategy sets out the Council's vision built around the three themes of People, Place and Prosperity.⁵ This overarching framework for local strategies, policies and plans envisions Reading in 2030 and sets out how Reading can maintain and enhance its role as a regional centre with excellent transport connections and transport service delivery.

We continue to work alongside other Council services to ensure that cycling is embedded within relevant areas of the Council to support the delivery of the Sustainable Community Strategy⁵ and its themes as illustrated in Figure 3.1. This includes integrating cycling within neighbourhoods through the planning process to encourage cycling for everyday journeys to key *places*, working with *people* within these neighbourhoods to encourage the use of lower carbon alternatives and connecting people to jobs and services to support a *prosperous* local economy.

Figure 3.1 - Sustainable Community Strategy Themes



Local Transport Plan 3 (LTP)

Our adopted third Local Transport Plan³ (LTP3) 2011-2026 sets out our transport vision and objectives that have been developed in the context of the three Sustainable Community Strategy⁵ themes as well as the identification of four transport delivery approaches that link to different policy areas and types of transport measures for implementation.

Our Transport Vision:

Transport in Reading will better connect people to the places that they want to go: swiftly, safely, sustainably and in comfort. We will meet the challenges of dynamic, low-carbon future to promote prosperity for Reading.

Whichever way you choose to travel, by foot or bicycle, motorcycle, bus, rail car or boat whether to work or education, to leisure or the services you need, our transport system will help you get there.

Policies outlined in the LTP related to improving cycling facilities in Reading and encouraging more people to cycle are as follows:

Inclusion

- To implement multi-targeted schemes to achieve best value for money, particularly those that will make pedestrian and cycling connections safer and more attractive to local destinations

Interventions

- To give priority to walking, cycling and public transport and improving access by these modes; and
- To provide travel information on all transport options through a wide range of channels to enable everyone to make better decisions for their journeys.

Infrastructure

- To identify and pursue opportunities to upgrade radial, orbital, regional and national connections that will secure local benefits; and
- To maintain close working relationships with central government, neighbouring authorities, transport operating companies, Network Rail, the Highways Agency and other partners.

Innovation

- To encourage and enable low carbon or low energy travel choices for private and public transport; and
- To use innovative techniques of communication and engagement to review and reshape the strategy over time.

The Cycling Strategy 2008¹ was documented as an approved part of the Local Transport Plan (LTP3) and this strategy will supercede it. Other documents relevant to cycling within the LTP3 suite are:

- Sustainable Modes of Travel Strategy (School Travel)
- Road Safety Strategy
- Climate Change Strategy
- Air Quality Management Plans
- the Local Development Framework

These documents set out how cycling should be embedded into everyday lives by improving safety, working with and encouraging schools to promote cycling and other sustainable modes, reducing carbon and improving air quality as well as incorporating cycling into the design of new developments and existing developments where there is a change of land use.

We will aim to increase the number of people cycling to the town centre as outlined in our Corporate Plan and other local destinations including schools and neighbourhood centres.

Local Sustainable Transport Fund

The Council successfully secured £25.6 million from the Department for Transport's Local Sustainable Transport Fund² (2011-2015) to deliver a range of transport improvements. Improvements include: measures encouraging active travel, the development of a cycle hire scheme, personalised travel planning and improved information and enhancements to the public transport network. All of these measures help promote cycling and improve the transport network for cyclists and other vulnerable road users through the provision of bus priority, incentivisation of sustainable modes and improved information allowing users to make better choices.

Cross boundary working has been further enabled through the delivery of the LSTF 'Targeting Travel Choice Transitions'² grant that included areas of Wokingham and West Berkshire that make up the wider urban area of greater Reading. Other partners include the Local Enterprise Partnership, University of Reading and public transport operators.

The Local Sustainable Transport Fund programme - Targeting Travel Choice Transitions² aims to achieve an additional 2300 daily cycle trips compared to the 2011 baseline over the period 2012 to 2015. Evidence suggests that individuals are more likely to change their behaviour at key point in their life or transition points such as when moving house or starting a new job or school.¹⁸

The active travel programme has so far delivered mainly 'soft measures' promoting cycling. For example, workplace cycle challenges encourage employees to try cycling to work and for other trips by creating a competitive atmosphere between individuals, teams, departments and organisations. Sustrans' cycle initiative 'Bike It' has also been offered to primary schools across Reading,

Wokingham and West Berkshire. More details of the programme are described in Section 4 as well as information on consultative meetings in Section 6.

The Local Sustainable Transport Fund programme - Targeting Travel Choice Transitions² aims to achieve an additional 2300 daily cycle trips over the period 2012 to 2015.

4. ENCOURAGING CYCLING

Design principles for cycling infrastructure are integral to creating a successful and high quality cycle network. This section identifies how the Council will improve cycling infrastructure, promote cycling as an inclusive mode of transport and provide interventions to encourage residents and people visiting and working in Reading to consider cycling. This is supported by a series of technical drawings, included in Appendix A, illustrating how we will aim to design schemes incorporating cycle facilities in accordance with legislation and prescribed standards. We will learn from other authorities and organisations involved in promoting cycling to ensure schemes are designed according to examples of best practice. Innovative and robust design solutions will be implemented in order to encourage cycling as part of an integrated multimodal transport strategy.

Cycle Route Design Principles

This strategy builds on the existing colour-coded routes delivered as part of the previous strategy and focuses on the implementation of physical improvements to bridge gaps in routes and address barriers to cycling.

We will aim to ensure that cycle facilities meet the following design principles outlined in Local Transport Notes 02/08 Cycle Infrastructure Design⁷ and 1/12⁸ Shared Use Routes for Pedestrians and Cyclists (LTN):

- Comfort
- Convenience
- Attractiveness
- Safety
- Accessibility

Our routes are conveniently located to ensure that they connect to key destinations such as schools, neighbourhood centres, leisure facilities, transport hubs (to include future cycle hire locations) and employment centres as well as other facilities and services. Community routes are also provided to ensure that cycling is not only easily accessible to/from Central Reading but also within neighbourhoods.

Existing and new routes will be reviewed to ensure that any gaps in the network are improved, that continuity of routes is maintained and that cyclists can travel easily between routes to reach their destination. This will help create a network that is more attractive and safer to navigate between routes.

Types of Cyclists

It is recognised that different types of cyclists have different needs and as a result our branded network was developed with various types of facilities available both on and off-carriageway. Parallel routes have been provided to enable users to choose the best route for them dependent on their confidence and end destination.

The LTN 02/08⁷ identifies five basic design cyclist categories:

- Fast commuter;
- Utility cyclist;
- Inexperienced and/or leisure cyclist;
- Children; and
- Users of specialised equipment

Research undertaken by Transport for London highlights the benefits of converting leisure cyclists into utility cyclists building on their positive attitude towards cycling.¹⁹ We recognise the needs of these cyclists vary considerably compared to more experienced cyclists.

Our priority will be to focus on providing facilities for inexperienced and/or leisure cyclists on quieter roads, particularly community routes linking branded cycle routes. We will also aim to provide commuter routes to assist more experienced cyclists using busier roads, including the strategic road network, offering more direct routes such as Wokingham Road.

Families will initially be encouraged to try cycling for leisure purposes along off-carriageway facilities and quieter roads with the aim of encouraging trips to other destinations such as schools and neighbourhood centres. New facilities will aim to take into consideration the needs of people using specialised equipment such as trailers, tag-a-longs and adaptable bikes, including 1.5 metre wide cycle lanes and barriers that are accessible for all designated users.

Priority of Cycling Facilities

Local Transport Note 1/12 states that the '*road network is the most basic and important cycling facility available*' and that on-road facilities should be provided unless there is a safety concern.⁸ The Council recognises the benefits of on-road cycling as improving route continuity and reducing delays and conflicts with pedestrians. Dedicated on-carriageway facilities such as cycle lanes or symbols will be provided where there is sufficient carriageway width and lane capacity is not reduced, including along busy distributor routes such as the A329 Oxford Road.

However, off-carriageway facilities will be considered where there is sufficient width and where such facility would improve route continuity to key destinations. Off-carriageway facilities will also be considered where there are a high proportion of inexperienced cyclists and children to cater for, and the alternative is a busy traffic distributor route.

As a result, we will audit and provide facilities based on the hierarchy of provision as illustrated in Figure 4.1 with consideration given to the types of user and their needs. 'Purpose-designed exclusive rights of way' may be possible especially in new developments to expand the urban network.

Figure 4.1 - Suggested Hierarchy of Provision (as outlined in LTN 01/12⁸)

Consider	Possible actions	
First  Last	Provide for cyclists in the carriageway	Traffic speed/volume reduction HGV reduction Junction/hazard site treatment Reallocation of carriageway space
		Create new shared use routes
	Convert pedestrian routes to shared use	

Traffic speeds, volume reduction and junction treatments are key to the successful fulfilment of network management and road safety responsibilities as well as the cycling objectives of LTP3.² Ongoing measures to tackle these issues include parking enforcement, traffic calming, bus priority and Intelligent Transport Systems such as linked traffic signals, Variable Message Signs and inductive loops. Such measures are also considered in auditing cycle routes. Guidelines to vehicle volumes and speeds when identifying suitable cycle facilities to install or maintain are also outlined in LTN 01/12 - Shared Use Routes for Pedestrians and Cyclists.⁸

The colour-coded cycle network utilises various facilities including quiet roads defined by their low traffic flows and/or traffic calming and on-road cycle lanes and bus lanes giving cyclists priority over private vehicles on busier roads. Off-carriageway routes or shared-use paths also form part of the network where busy roads create a barrier to accessing residential areas and key facilities/services. The network incorporates many 20mph zones and speed limits especially those outside schools to encourage cycling to school as well as those connecting to neighbourhood centres and other facilities and services.

Such existing facilities and restrictions and the potential for new facilities that meet these standards are considered when auditing the cycle network. If new guidance and auditing procedures are developed following the recent All-Party Parliamentary Cycling Group report, 'Get Britain Cycling', these will be incorporated into the local cycle network identification, auditing and design process.⁴

TRAINING & EDUCATION

This section sets out how the Council will encourage people of all ages and backgrounds to consider cycling for everyday journeys through the provision of training and education in parallel to the recommendations of the 'Get Britain Cycling' report.⁴ There are a number of barriers to people cycling which can often be overcome by initiatives aimed at improving their confidence, fitness or providing them with the skills to cycle safely and responsibly.

In addition, there are many community groups that could benefit from cycling in terms of improved road safety around school gates, improved physical and mental wellbeing and increased accessibility for those that cannot drive or do not have access to a motor vehicle.

The Council is committed to encouraging more people to choose cycling by providing training and sessions that can help improve confidence and highlight the other benefits of cycling.

This will enable and encourage more people living, visiting and working in Reading to cycle for local journeys in and around neighbourhoods thus making them more aware of the local environment and encouraging social interaction with neighbours and other people within the local community.

Examples of such sessions are being delivered as part of the CTC 'Behavioural Change programme', which encourages people to try cycling, and is being implemented over the Local Sustainable Transport Fund period 2012-2015.² The Council is committed to the delivery of these sessions which target various community groups, including families. In addition:

- GPs can refer people with health issues to our 'Cycling for Health' sessions
- 'Everybody Active' is aimed at people with disabilities who can try a range of bikes depending on their needs
- Children may attend the 'After School Cycling Club'

"Ever since my accident I haven't been able to get out on my regular bike. The launch of Everybody Active has allowed me to ride a freewheeled trike and I'm loving it! My balance issues are a thing of the past. I'm hoping to purchase my own adapted bike soon and I'll be out with my CTC friends again.

Quote from 'Everybody Active' Participant

We will also aim to work with Further Education establishments such as Reading College and the University Technical College opening September 2013 to promote cycling, including the delivery of adult cycle training and maintenance sessions for students and staff.

The University of Reading are involved in CTC's Behavioural Change Programme which has set-up a bicycle recycling scheme and long-term hire, given students specific projects to deliver such as the production of posters, video clips and other marketing materials aimed at heightening the awareness of the branded cycle network.

We aim to continue:

- delivering cycle training to more primary school pupils every year
- encouraging secondary schools to offer advanced training to pupils in years 7, 8 and 9
- offering cycle training to businesses for their employees.

The national cycle training programme Bikeability is offered to all pupils in years 5, 6 and 7 throughout the year to encourage children to cycle safely and responsibly. This programme is usually delivered during school hours. However a number of courses are organised during the school holidays so pupils attending schools not currently offering Bikeability also have the opportunity to participate. We will continue to build on the good work delivered at schools by increasing the number of pupils participating in Bikeability.



This more advanced training will enable them to cycle on busier roads and through more complex junctions as is often necessary when travelling on longer journeys to secondary school.

In addition, we also offer adult cycle training through businesses and our LSTF² funded door-to-door and workplace travel advice programme. These training sessions deliver the same outcomes as Level 3 Bikeability, providing adults with the skills and confidence to cycle for local journeys in a variety of traffic conditions and alongside other road users.

EVENTS & CAMPAIGNS

Interventions also play an important role in encouraging people to cycle by highlighting the benefits of cycling and increasing awareness of cycling and cyclists through targeted messages, campaigns, events and travel advice. National Census data collected in 2011 illustrates that Reading ranks 50th in the number of people cycling to work out of 348 local authorities.¹⁵ We aspire to build on this by working alongside businesses and other local authorities to promote cycling, including organising events such as led-rides and cycle challenges as well as encouraging and supporting new and inexperienced cyclists through the delivery of cycle training and maintenance sessions.

The Council will support campaigns aimed at making drivers more aware of vulnerable road users including cyclists as well as the benefits of this mode of travel.

Recent campaigns include the national road safety Think! Cyclist campaign which aims to highlight the similarities of drivers and cyclists and raise awareness of cyclists' presence on the carriageway. Other key campaigns include using bike lights during hours with limited day light and remaining within the speed limit through the use of speed activated signs.

The Council will continue to use existing resources such as Variable Message Signs to identify the benefits of cycling such as reliable journey times and improved

health. We also use the signs to increase people's awareness of the branded cycle network by identifying colour-coded routes in close proximity to the signs as well as cycle events taking place.

National events, including Bike Week, are organised by the Council throughout the year. Bike Week attracts a wide range of individuals including families, experienced and less experienced cyclists. Events usually include try-a-bike session, bike marking by the Police, a bike smoothie maker, led-rides, a town centre stall, biker's breakfasts and a lunch-time BBQ at a local business park. Community rides will also be considered with the aim of encouraging everyone, including families, commuters and utility and leisure cyclists to take part. We will also promote events restricting access to motorised vehicles such as those organised by Bristol City Council so people walking and cycling can enjoy car-free streets.

In addition, we aim to work with schools to encourage participation in Sustrans' annual Big Pedal event in February and Bike to School Week in June to further encourage children and parents to cycle to school. Our LSTF programme(2012-15)² also offers schools the opportunity to participate in 'Bike It' run by Sustrans. Six schools took part in the initiative during 2012 with further schools invited to



participate between 2013 and 2015. The initiative aims to show schools how cycling can benefit them and the school community by embedding cycling into the school curriculum and identifying champions to ensure it lasts beyond the programme.

Cycling is also promoted at other events organised or attended by the Council, including Reading Children's Festival and Freshers Fayre and Green Week at the University of Reading.

The Council has also been working with 'Challenge for Change' funded through LSTF² grant to deliver an annual cycle challenge aimed at businesses and their employees. The challenge encourages new and existing cyclists to cycle to work through a competition offering a host of prizes for individuals, teams and organisations. The challenge is based on the number of trips logged for all purposes: commuting, leisure and other journeys as the target is to increase the number of people cycling rather than the distance travelled. Other initiatives are delivered alongside the challenge such as maintenance sessions, bikers' breakfasts and led-rides.

INFRASTRUCTURE

This Strategy builds on the development and branding of the colour-coded cycle routes identified during the implementation of the 2008 Cycling Strategy¹ by focussing on bridging gaps and overcoming barriers in the existing network.

This will be delivered through the provision of improved infrastructure as set out below, including minor improvements recommended in the 'Get Britain Cycling' report:⁴

- signs and road markings
- traffic calming measures
- cycle parking and hire
- junction improvements
- engineering measures including a new pedestrian and cycle bridge and the opening of the Napier Road underpass

We will also continue to work with other Berkshire authorities, Hampshire and Oxfordshire to share best practice and establish long distance cycle routes, including the new National Cycle Network (NCN) route that is being developed by Sustrans in partnership with Reading, Wokingham, Bracknell Forest and Windsor and Maidenhead. In addition, it is integral to a quality cycle route that assets are maintained appropriately to ensure that they are safe, comfortable, attractive and convenient for cyclists.

There are a number of trials currently taking place to address cycle safety issues such as roundabout design, cycle priority and collisions with HGVs. These trials aim to develop solutions to encourage more people to cycle and the Council is committed to learning from examples of best practice. The 'Pocket Places for People' project led by Sustrans and part funded by Health Confirm is an example of where temporary interventions will be trialled before permanent solutions are introduced into the Northumberland Avenue neighbourhood. This project is based on similar schemes implemented in New York and as part of DIY Streets across the UK.

Napier Road Underpass

In order to overcome the barrier of the Great Western Mainline, another element of the LSTF² programme is to open the underpass between Napier Road and Kenavon Drive. Opening this link for pedestrians and cyclists will better connect residents of Kenavon Drive and Newtown to local and national cycle routes, parks and open spaces to the north, and employment centres and retail destinations on both sides of the railway. This scheme will include the upgrade of the existing structure to a proposed shared facility, including structural improvements, better lighting, comprehensive signing and connections to the NCN 5 via the planned pedestrian and cycle bridge.

We will open the Napier Road underpass linking Newtown to National Cycle Network 5 through Kings Meadow by Summer 2014.

Pedestrian & Cycle Bridge



A key component of the Local Sustainable Transport Fund² (LSTF) programme is the construction of a pedestrian and cycle bridge to the east of Fry's Island over the River Thames. There are currently limited options available to cyclists wishing to cross the barrier created by the River. Therefore this vital link will enable cyclists to avoid three busy roundabouts linking the town centre to Caversham via Christchurch Meadows, as well as the two bridges over the Thames which both serve high vehicle and pedestrian flows. To the south, the new bridge will connect to the new northern interchange at Reading Station and the proposed 'cycle parking hub' via an improved riverside foot and cycle path, Norman Place and new cycle facilities on Vastern Road, including a toucan crossing. The bridge will also provide better connections from the north to destinations in East Reading such as Reading College and the Hospital via Napier Road Underpass.

The proposed shared pedestrian and cycle bridge is planned to be delivered by Summer 2015.

Cycle Parking

Good quality and secure cycle parking located at convenient locations is essential to a successful and well used cycle network. Cycle shelters should also be considered where possible. Cycle parking is made available at major destinations, including the town centre, transport interchanges, business parks, near neighbourhood facilities and services, at schools, health centres, neighbourhood shopping parades and leisure destinations such as sports centres and libraries. Cycle parking facilities can either be installed on footpaths or in-carriageway depending on the availability of space, as well as on private land.

The provision of a 'cycle parking hub' is currently being investigated in order to accommodate the growing number of bicycles being parked at or in close

proximity to Reading Station. There are currently around 375 cycle spaces around the Station, but some of the parking areas are significantly over-subscribed. The aim of the proposed 'cycle parking hub' is to provide a high quality facility that caters for current and future demand by at least doubling the number of available cycle parking spaces by Winter 2014. This facility will predominately cater for people accessing the northern interchange and link with other infrastructure projects, including the pedestrian and cycle bridge. Cycle hire stations will also be incorporated into the facility.

However, innovative parking solutions will be required in areas with limited space. As a result, solutions such as cycle planters, two-tiered systems and design ideas utilising existing street furniture are some of the specialist cycle parking solutions that may be required. Cycle planters are already being used across the borough on private property as part of a sustainable travel grant scheme offered by the Council. In addition, we will promote the branded cycle routes on the stands where situated along the colour-coded network. Current proposals include branded stickers and RFID tags (Radio Frequency Identification) directing people to our website for more information on the cycle network.

We note the recommendation outlined in the 'Get Britain Cycling' report suggesting that "provision for cyclists is considered at an early stage of the design, and is part of the approval procedure" for all new developments.⁴ In Reading, the Council requires developers to provide cycle parking facilities that at least meet the requirements set-out in our 'Revised Parking Standards & Design' document, which forms part of supplementary planning guidance.²⁰ These Standards have been adopted to instruct developers to incorporate such facilities into the design of their proposals, including the provision of cycle parking stands, lockers and shelters to further encourage cycling. In addition, with a high proportion of high rise residential buildings it is important to ensure that people living in this type of development have access to secure and sheltered cycle parking facilities. Further guidance can be found in Manual for Streets 2¹⁰ and LTN 02/08⁷.

We aim to increase the number of cycle parking spaces available substantially over the coming years to support future growth in cycling, including a Cycle Parking Hub, at Reading Station, by Winter 2014.

Cycle Hire

Public Cycle Hire is an innovative form of public transport that has been implemented in towns and cities around the world in recent years. Cycle hire can help break down barriers to cycling, particularly where storage is limited or where interchange with other modes prevents cycling from being an option for onward journeys. In addition, cycle hire can remove the burden of bike maintenance, encourage new trips during the working day and may also attract leisure cyclists.

As part of the LSTF programme, a 'core scheme' has been designed encompassing 29 docking locations (as illustrated in Figure 4.2) with 350 docking points and 200 bicycles. This scheme covers major destinations in central, south and east Reading, including Reading Station, the University of Reading and major business parks. After a competitive bidding process that initially saw expressions of interest from 40 organisations, the contract has been awarded to Hourbike, a Surrey-based

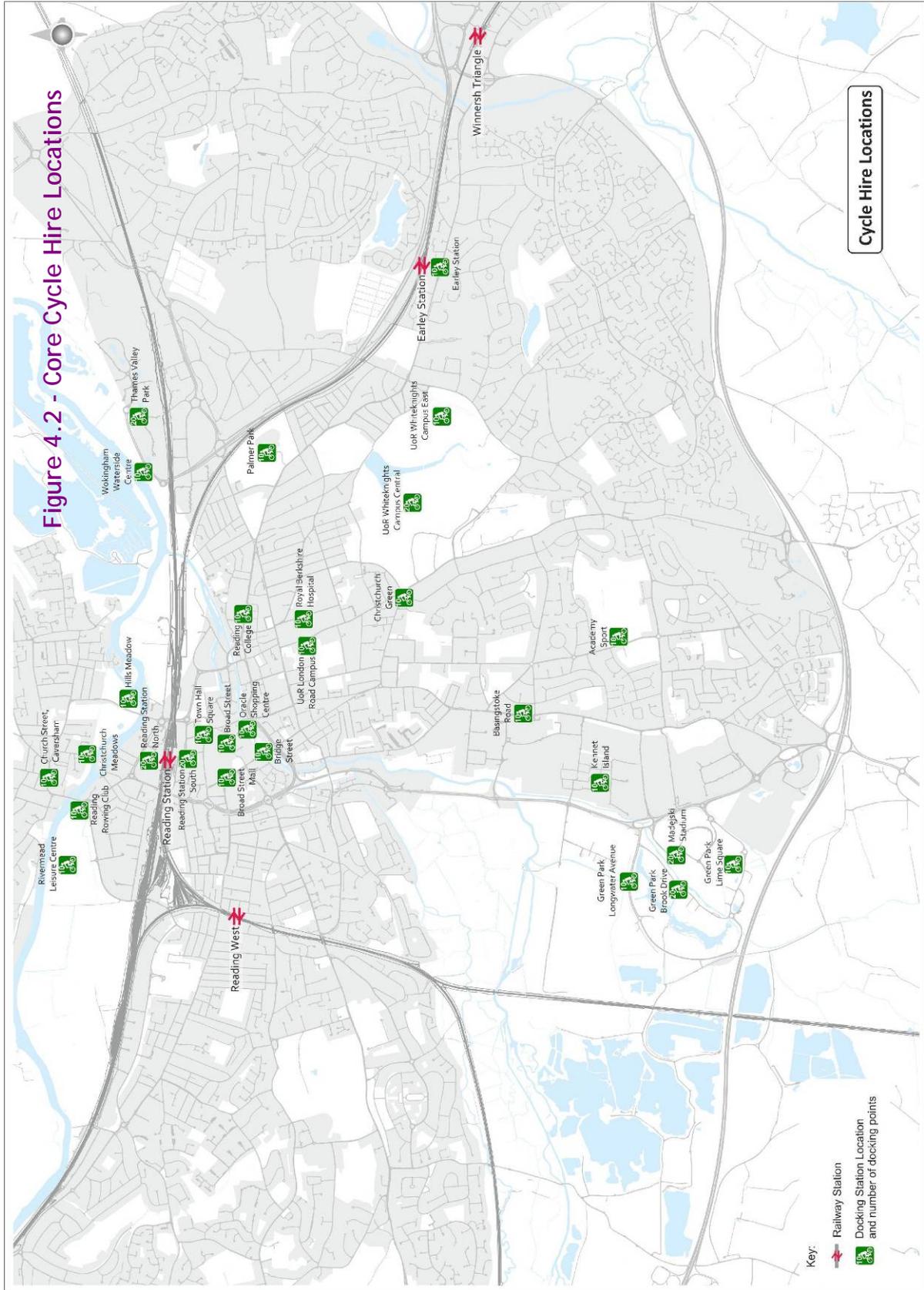
company that has been in the growing cycle hire market since 2007. Installation will begin this winter, with the public bicycle hire service planned to go live in Spring 2014.

Hourbike offers a system that has been implemented elsewhere in the UK and abroad and will work in partnership with Reading Borough Council and other stakeholders to build up use. If successful, we aim to expand the scheme to other destinations and areas of Reading and potentially further cross boundary into Wokingham and West Berkshire. Expansion may be through a further large phase if funding is available, through individual sites that may be funded by third parties such as developers or by scheme sponsorship or a combination of funding options.



In order for cycle hire to be successful we will develop the routes to and from the cycle hire docking locations to comply with the five basic design principles as outlined in this Strategy. Cycle hire docking locations will be connected via the branded cycle network and junctions and other sections along these routes will be upgraded as appropriate and signed.

We are committed to delivering cycle hire as a new transport service, planned to be available by Spring 2014.



Signs and Road Markings

We currently use a variety of signs on local and national cycle routes, such as road markings and traffic signs that conform to the Traffic Signs Regulations and General Directions 2002.²¹ Clear and informative signing is a key part of cycle-friendly infrastructure to ensure that cyclists can navigate a route successfully. However, it is also important to minimise the amount of street furniture to reduce clutter, maintenance liabilities and visual intrusion and sometimes to create more space for cyclists. As a result, existing poles and columns are used where possible.



Extensive signing has already been installed as part of the development of the colour-coded cycle network both within Reading and neighbouring boroughs Wokingham and West Berkshire.

This may include branded road markings illustrating relevant route numbers, colours, directional road markings and paving blocks (see right) highlighting that routes are a shared space for both pedestrians and cyclists (See Appendix A, Drawing 001 and 002). These paving blocks are being installed along the London Road corridor between Cemetery Junction and London Street as well as along Crown Street linking to new cycle facilities on Southampton Street. The Council will utilise existing street furniture when mounting new signs to reduce street clutter and obstacles on footpaths.



In addition, we will work with Sustrans to encourage cycling including signing local and national routes through Reading to help create a more connected and comprehensive cycle network.

We will continue to review and where appropriate extend the existing cycle network to ensure that all neighbourhood destinations are within easy reach of a colour-coded route or link.

We will build on our branded cycle routes by investigating the use of other forms of traffic signs and way-finding to make people more aware of the network and each other.

Cycle Lanes

National guidance (Local Transport Note 02/08⁷) outlines the potential benefits that the provision of cycle lanes can have, such as:

- creating a 'comfort zone' for less-confident or less-experienced cyclists who are nervous when riding in mixed traffic
- helping reduce vehicle speeds by creating narrower traffic lanes
- raising driver awareness of cyclists on the carriageway.

The provision of nearside cycle lanes can also help extend the life of the carriageway surface by moving motorised vehicles away from areas vulnerable to damage such as gullies and kerb lines. Surface deterioration in these areas creates an uncomfortable ride for cyclists. Road markings such as cycle lanes can also help reduce vehicle speeds without the need of engineering measures as well as improving driver awareness of cyclists.

There are many roads in Reading to which these benefits can be applied and these will be targeted for the installation of cycle lanes on an area basis and through the annual resurfacing programme.

In-carriageway advisory cycle lanes should ideally be 1.5 metres wide as outlined in LTN 02/08⁷ and be carried through pinch points such as refuge islands where there is adequate width to accommodate both the advisory cycle lane and a 2.3 metre wide vehicular lane (See Appendix A, Drawing 003-005). The minimum width of an advisory cycle lane should be 1.2m. It should be noted that 2.3m wide lanes are not sufficient to accommodate HGVs without encroachment into the cycle lanes.

As a result, it may be necessary to undertake vehicle classification surveys to determine the proportion of HGVs using a route. Cycle lanes should also continue across side road junctions.

Reallocation of road space by measures, such as the installation of cycle lanes on Berkeley Avenue, will continue to be considered where there is sufficient carriageway width and lane capacity is not reduced.

When considering cycle routes on significant gradients, the Council will endeavour to provide cycle lanes in the uphill direction to increase space for cyclists, whose movements can often deviate when travelling uphill. Alternatively shared use routes will be considered where footway width permits.

On roads that are too narrow to accommodate a 1.2m wide cycle lane the following will be considered:

- Wide nearside lanes where this is not expected to encourage higher vehicle speeds
- Removing the centre line to create one wide traffic lane with cycle lanes on either side of the carriageway. This is not recommended for roads with high HGV and/or bus flows (See Appendix A, Drawing 006)
- Implementing measures that reduce speeds and using cycle symbols to guide cyclists and alert drivers to their presence.

Bus lanes can also play an important role in the cycle network by allowing cyclists to overtake queues, exempting them from one-way streets and benefitting from priority at side roads by remaining on the carriageway whilst also giving priority to buses.

Bus lanes should be a minimum of 4m wide to allow buses to overtake cyclists safely without leaving the bus lane. Where space is limited bus lanes could be a minimum of 3m wide however consideration will be given to buses moving out into the vehicular lane to overtake cyclists and whether this might cause a road safety hazard.

Junctions

Advanced Stop Lines (ASLs) should be installed at signalised junctions to aid cyclists' movements through the junction. This type of facility benefits cyclists' safety through junctions and has little or no effect on other vehicles and road capacity. Reading has a number of ASLs installed across the Borough which provide even greater benefits when integrated with traffic signals detecting cyclists, resulting in reduced waiting times.

We aim to install Advanced Stop Lines at junctions as well as a feeder lane particularly on branded cycle routes.

Examples of typical ASL schemes are illustrated in Appendix A, Drawings 007 and 008. Alternative ASL layouts will be considered alongside left-turn only lanes as appropriate. The Katesgrove Lane and Pell Street junction benefits from Advanced Stops Lines on all four arms of the junction and two cycle detectors in each ASL reservoir as well as detectors sensing the movements of other vehicles.



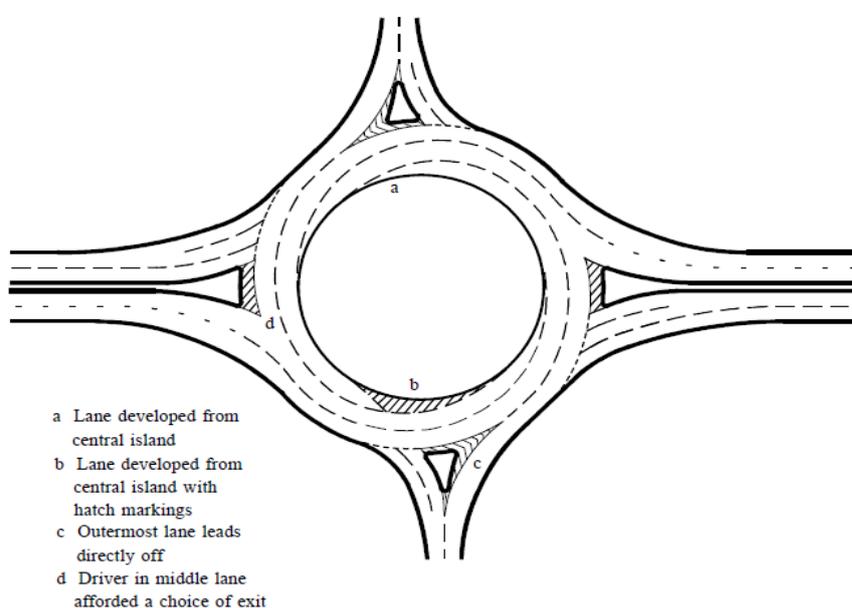
Cycle Facilities at Katesgrove Lane/Pell Street Junction

Roundabouts are generally viewed as safe and efficient by drivers of motorised vehicles. However, large conventional roundabouts are often avoided by cyclists who prefer to either use footpaths or seek alternative routes, as a high proportion of accidents involving cyclists take place on such roundabouts. The majority of these accidents occur when entering vehicles collide with circulating cyclists.

We will consider best practice, such as the spiralling of roundabouts to help reduce the number of cyclists involved in these types of collisions.

These markings help by guiding cyclists and vehicles into the appropriate lane thus reducing the number of conflicting movements. The Vastern Road and Bridge Street/Southampton Street roundabouts will be spiral marked as part of the 2013/14 Road Safety Programme. Figure 4.3 shows an example of spiral markings illustrated in Design Manual for Roads Bridges (DMRB).⁹

Figure 4.3 - Example of Spiral Road Markings (extracted from DMRB⁹)



Spiral Markings (paras 3.6, 3.7)
Figure 3/4

The provision of suitable **Crossings Facilities** along the cycle network is also important to ensure continuous and well-connected routes. Cyclists are permitted to use toucan crossings, a number of which have been installed across the Borough including two along Vastern Road and one on London Road. If there is demand for new facilities to be installed to bridge a gap in a cycle route, the Council will either consider a toucan crossing or zebra crossing with adjacent cycle priority as trialled by other authorities.

Cyclists will be considered at the initial design phases, when the Council is investigating schemes which involve restricting the access of vehicles, such as the introduction of **one-way streets, road closures and turning restrictions**; and appropriate facilities designed accordingly.

One example of where this has been achieved is at Talfourd Avenue adjacent to Wokingham Road (see photo). A ban preventing motor-vehicles from turning into Talfourd Avenue from Wokingham Road was introduced in 2012 and consists of a 'plug' allowing cyclists to turn into the road as well as a right-turn cycle lane and 20mph speed limit (See Appendix A, Drawing 009).



Talfourd Avenue, junction with Wokingham Road

Cycling on Pavements

Cycling on a footway is an offence under section 72 of the Highways Act 1835 as amended by Section 85 (1) of the Local Government Act 1888. The enforcement of cycling offences is an operational matter for the local police force who can use the Fixed Penalty Notice (FPN) as direct means of dealing with most minor offences. The Road Traffic Act 1991 also allows the Police to issue fines for dangerous cycling and careless cycling. These restrictions do not apply to children under 16 or where the Police believe that a responsible cyclist has mounted a footway to avoid an area of very busy traffic and who cycles with regard to other users.

The Council is committed to increasing the number of people cycling responsibly, and will **work in partnership** with Thames Valley Police and to identify key areas to target. Offering cycle training as an alternative to Fixed Penalty Notices will be further investigated to encourage cycling for everyday journeys. Campaigns promoting cycling will include:

- the use of bike lights
- complying with the Highway Code
- reducing the risk of bike theft

Joint events will be held in partnership with Thames Valley Police in town centre pedestrianised areas with the aim of enforcing cyclists contravening traffic regulations as well as **offering information and advice on cycle routes and carrying out cycle safety checks**. These events will also be carried out in neighbourhood areas where addressing pavement cycling has been identified as a priority.

By working in partnership, the Council and Thames Valley Police will:

- Offer cycle training
- Offer information and advice on cycle routes
- Carry out cycle safety checks and bike marking
- Enforce Fixed Penalty Notices against cycling on the pavement in pedestrianised areas and footways not designated as shared-use.

However, we recognise that cyclists have varying abilities and needs. As a result, we will consider providing **off-carriageway facilities** by officially re-designating a footway to permit cycling when there is a high proportion of inexperienced cyclists and children to cater for, and the alternative is a busy traffic distributor route or to improve route continuity.

Where a pavement is wide enough, **shared use facilities** should ideally be 3 metres wide with a minimum width of 2 metres. Street furniture along these paths should be minimised and located sympathetically to reduce obstacles along the route. This includes bins, benches, poles, lamp columns and other items of furniture. Dropped kerbs should be provided to ensure a smooth transition from the carriageway to the footway and vice-versa and be supported with road markings such as the cycle symbol and arrows.

As mentioned above, suitable crossing facilities should ensure continuity of the route, including the use of raised tables to prioritise cyclists at minor road junctions.

On shared-use facilities, we will prioritise the movement of pedestrians and cyclists across minor junctions along key routes by installing facilities such as raised tables.

This will ensure a continuous and comfortable off-carriageway route is provided. This type of facility is being introduced along the northern side of Vastern Road as part of the highway works for Reading Station and also at various locations in East Reading. Shared-use signs requesting that users look out for each other may be considered, as it can be cyclists not giving way across junctions that cause a conflict with turning vehicles. All road users must obey the Highway Code, but this does not always occur.

As well as pavements there are also paths designated for walking and cycling through **parks and neighbourhoods** providing an attractive alternative for less experienced and leisure cyclists. A number of access barriers have been installed along these paths historically to deter motorcycle abuse on off-carriageway routes. This will open up a number of routes for leisure and commuting purposes, particularly those using trailers and adaptable bikes.

We will review existing access barriers and provide alternatives where they are deemed inaccessible for cyclists, wheelchairs users and people with pushchairs.

Traffic Calming

A number of schemes aimed at reducing speed and accidents have been implemented using a range of traffic calming measures including road humps, cushions, builds outs, etc. Whilst these measures can improve safety they can also make cycle routes uncomfortable and create pinch-points. When introducing new traffic calming schemes, we will aim to construct cycle-friendly infrastructure such as speed cushions that can be more easily avoided by cyclists who ride alongside them. In addition, the removal of centre lines will be considered as evidence suggests that this can result in reduced vehicle speeds.

Twenty mile per hour speed limits and zones have been implemented across Reading near schools and neighbourhood centres. These have been introduced alongside other traffic calming measures to reduce speeds in areas where there are a significant number of vulnerable road users. The branded cycle network was developed taking these lower speed limits into consideration and to connect the routes to key neighbourhood facilities and services.

There is a proposal to introduce a 20mph zone scheme in East Reading as recommended in 'Get Britain Cycling' as part of a package of measures supporting walking, cycling and public transport use (see Figure 4.5).⁴ Consultation exercises carried out as part of area studies provide the opportunity to consider 20mph schemes in areas such as East Reading and Oxford Road. Twenty mile per hour will initially be introduced within the Eastern Area where consultation has already taken place.

We will continue to develop our cycle network based on the criteria above and will ensure cycle routes are considered in the Council's emerging 20mph strategy.

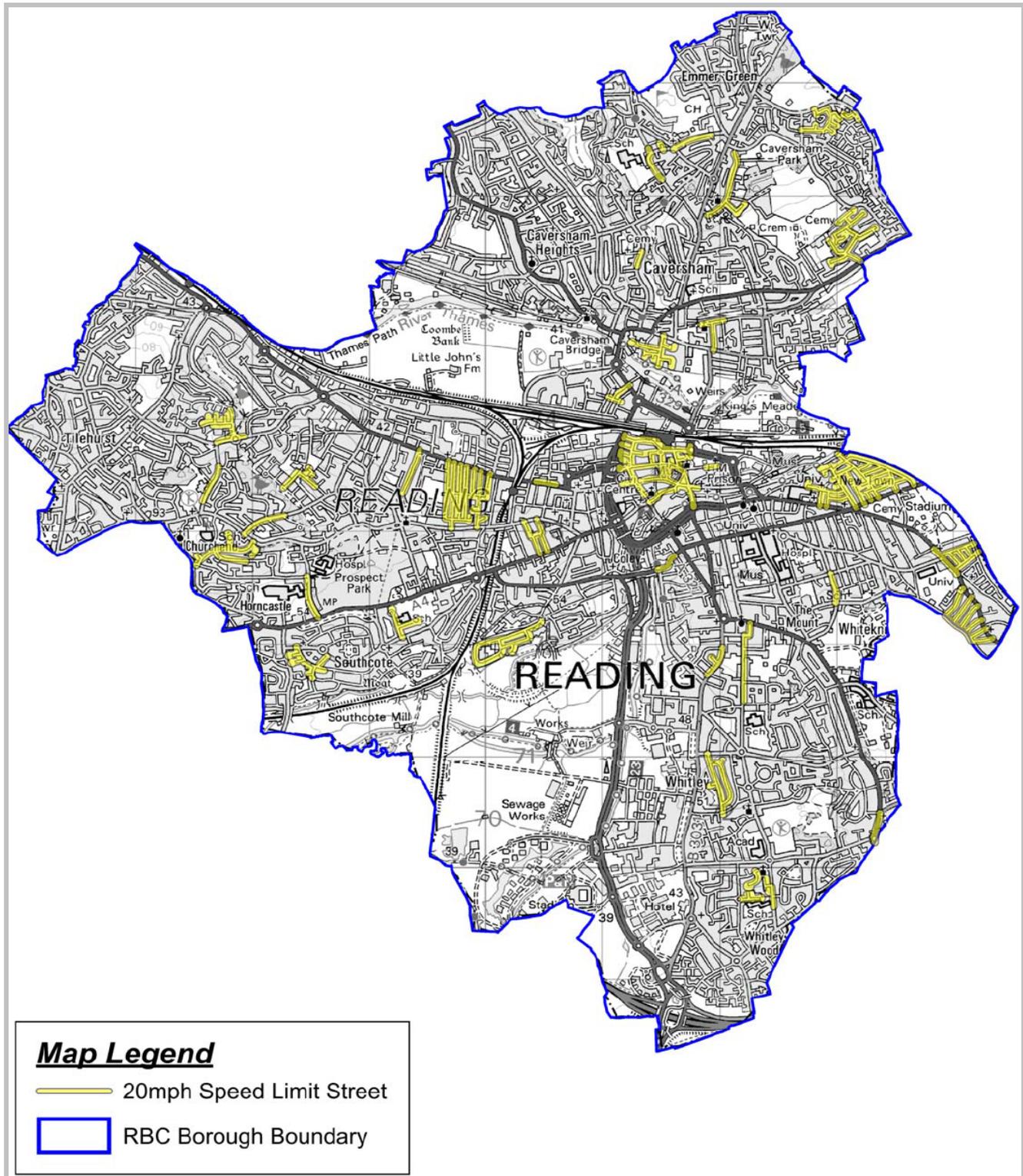


Figure 4.4 - 20mph Speed Limits in Reading

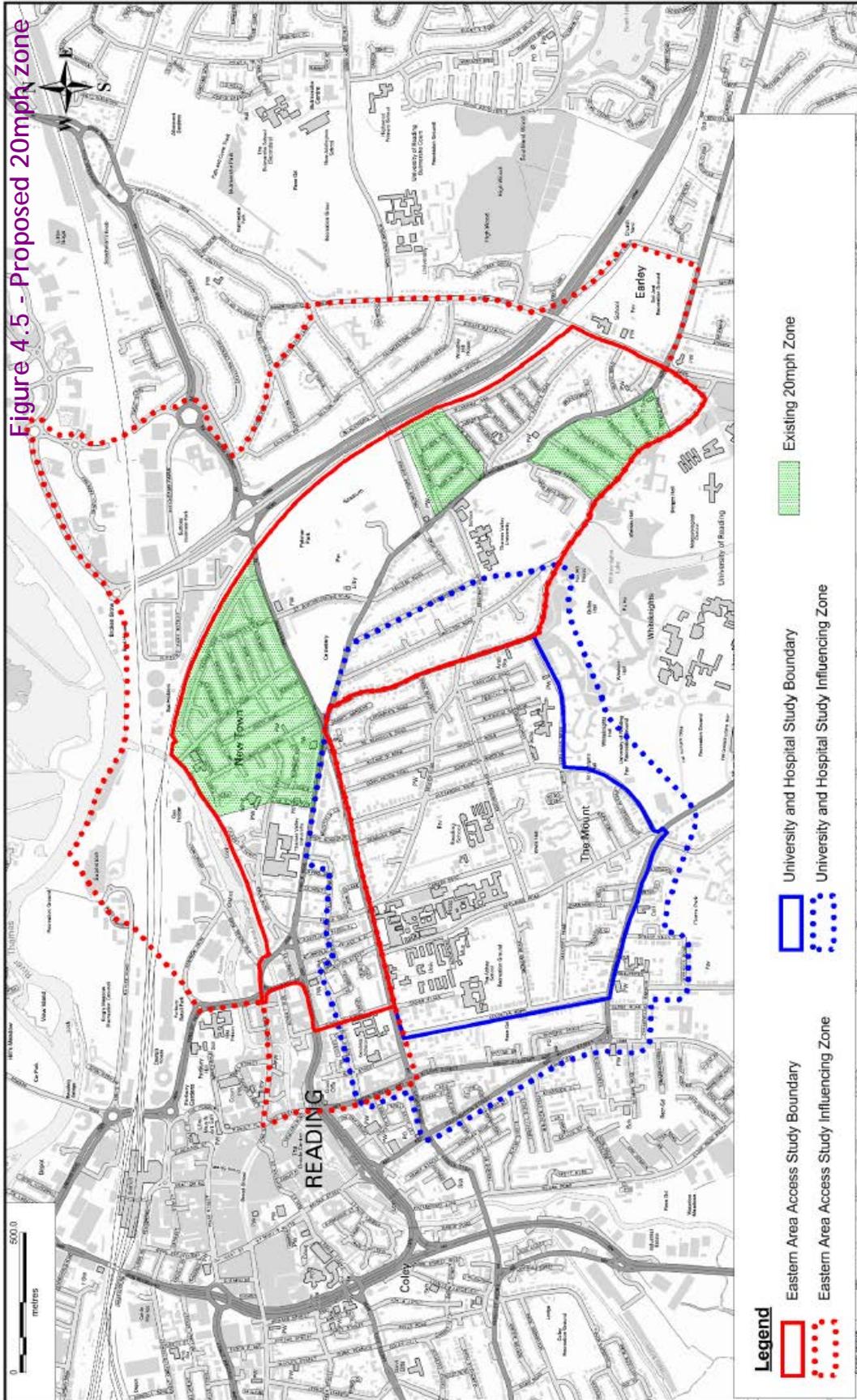


Figure 4.5 - Proposed 20mph zone

Title: **Study Areas & 20 Mph Zones**
East Reading

Produced by GIS & Mapping Services
 Date: 13/02/2014 Scale at A4: 1:18000
 Ref: 53509 - G:\MIData\CD\Env\Transport\20 mph zone E Reading\20mph zones A4L.wor
 © Crown copyright and database rights 2014 Ordnance Survey 100019672



Street Lighting

Low-carbon white lighting has been installed along a number of cycle routes as part of the LSTF programme to help improve the lighting levels, alongside helping to reduce the fear of crime and reduce ongoing maintenance costs and energy consumption. Routes that have benefitted from lighting upgrades include National Cycle Network 5 (NCN) along the River Kennet and the A33 corridor as well as the installation of lighting along NCN 4 through Kings Meadow, which was previously unlit.

Street lighting will be upgraded throughout the Borough and new columns installed such as those through Kings Meadows to create a better environment for pedestrians and cyclists.

Parking Controls

We aim to balance various road user needs including the provision of on-road parking facilities. Such facilities can create problems for cyclists if there is not adequate width between a car door and cyclist. LTN 02/08⁷ recommends a buffer zone of 500mm to 1000mm around the outside of the **parking bays** (See Appendix A, Drawing 010 and 011).

We will aim to provide a minimum of 500mm where possible to protect cyclists from opening vehicle doors.

However where this is not possible, we will consider the removal of the centre line and will end any cycle lanes prior to the bays as well as adding cycle symbols to the-carriageway to alert drivers to the presence of cyclists.

The provision of any new parking bays will comply with the guidance outlined in LTN 02/08⁷ including minimum bay widths of 2.0m to 2.4m for standard vehicles.

Maintenance

Maintaining existing and new infrastructure including signs, road markings, lighting and carriageway and foot/cycleway surfacing is integral to providing safe, comfortable and attractive cycle routes. Inadequately maintained signs and road markings can cause confusion, the perception of a disconnected cycle route and reduce awareness of other road users. Potholes and other pavement defects create hazards for cyclists, sometimes resulting in diversions towards or into the path of other road users. In addition, cycle routes both on and off-carriageway should be adequately swept to ensure that debris is removed. This is particularly important along tree-lined routes which may become slippery when wet, especially during autumn.

The annual resurfacing programme provides the opportunity to review existing road markings and consider an alternative arrangement to encourage sustainable travel.

We will review existing road markings as a part of the annual resurfacing programme and introduce new cycling facilities where possible.

The Council has identified additional budget for a fixed period of one-year (2013-14) to enable the repair of potholes across the borough including those along branded cycle routes regardless of whether they meet the existing intervention levels of 50mm deep and cover a surface area of 300mm x 300mm minimum.

The Council works alongside Sustrans who are currently running a volunteer programme in Reading focussing on the maintenance of branded and national cycle routes as well as promoting cycling. This programme includes: trimming back vegetation, assisting with cycle signing and reporting defects. We will also work in partnership with the Probation Service to carry out minor maintenance work such as vegetation clearing through the Community Payback Scheme.

5. EVALUATION

Local monitoring is important to measure change and understand whether targets such as those included in this Strategy and the Climate Change Strategy are achieved. The aim of the Reading's Local Sustainable Transport Fund programme to encourage additional daily journeys by all modes including an extra 2,300 cycling journeys will be monitored through various sources as set out in our Monitoring and Evaluation Plan and summarised below. Additional information can also be found in the Local Transport Plan and supporting documents.

Monitoring

The Council will monitor usage before and after a scheme has been implemented to ensure that it is operating effectively and attracting new users. We welcome individual and collective feedback post implementation and will work towards categorising responses by the type of cyclist to help us better understand the needs of different user groups.

Cycle usage will be monitored through the annual cordon count measuring trips made by all modes coming into and out of central Reading. The count takes place over one day for 12 hours and allows a comparison of mode share. We will also continue to monitor the number of bicycles parked at designated locations in the town centre and local neighbourhoods, including schools. The number of people registering and using the cycle hire scheme will also be monitored, including where bicycles are being rented and subsequently docked, the average rental period, journey time to docks and hires per bicycle.

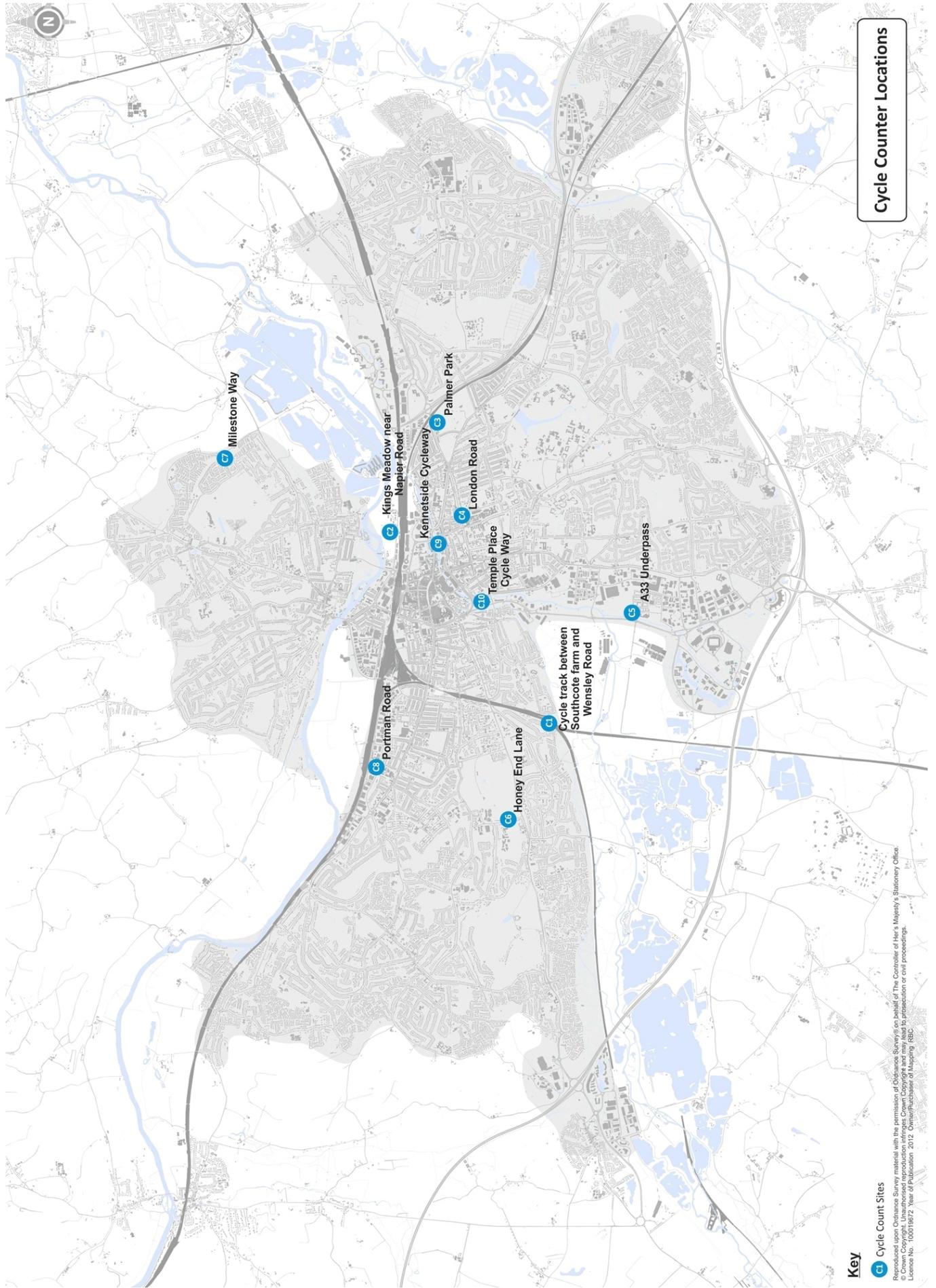
In addition, off-carriageway facilities are monitored remotely by ten cycle counters located across Reading (see Figure 5.1). Two counters have been upgraded and eight new counters were installed as part of the LSTF² programme in March 2013. These counters have been placed along routes serving key destinations including employment centres, neighbourhood centres and schools.

Annual monitoring reports will be produced once a baseline has been established outlining key information collected by the counters. In addition, the Council will consider the installation of more counters to collect and evaluate information from sites benefitting from physical improvements such as the proposed pedestrian/cycle bridge over the River Thames.

Quantitative and qualitative data will also be collected through cycle initiatives such as information on the number of participants benefiting from CTC's extended Cycle Champions programme. This includes the number of people attending cycle training sessions, maintenance courses and led-rides. Sustrans will also monitor the number of pupils cycling to school where the school is participating in 'Bike It'. Schools not participating in 'Bike It' will be requested to submit journey to school data via a hands-up survey as part of their school travel plan. There are currently opportunities to request journey to school data as part of the ongoing expansion of various schools in Reading.

Wider data is available from the annual National Travel Survey, Census data, Active People Survey and Reading's annual Residents Survey, and these will be used as part of the monitoring regime as appropriate.

5.1 - Location Map of Cycle Counters



Cycle Counter Locations

Key

Cycle Count Sites

Reproduced from Ordnance Survey materials with the permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Licence No. 100019872. Year of Publication: 2012. Owner/Purchaser of Mapping: REC.

Road Safety

Under the 1988 Road Traffic Act the highway authority has a duty to take steps both to reduce and prevent accidents and under the Traffic Management Act 2004 a duty to maintain and manage the road network to secure the safe and expeditious movement of traffic for all road users including pedestrians.

The Road Safety Strategy 2011 is a key document supporting the third Local Transport Plan. The strategy includes the following policies:

- to implement multi-targeted schemes, particularly those that will make pedestrian and cycling connections safer and more attractive to local destinations
- to take a preventative approach of scheme safety auditing, inspection and user education to reduce road casualties
- to engage with local residents, businesses and other stakeholders to target interventions to meet local needs
- to maintain and manage the transport network in order to keep transport moving safely, monitor trends and respond to circumstances.

A road safety programme is produced annually to support the Road Safety Strategy and identifies priority areas where injury accidents need to be reduced, particularly those involving vulnerable road users such as pedestrians and cyclists.

This programme involves a combination of road safety measures aimed at reducing both the number and severity of injury accidents through engineering, education and enforcement.

Reading Borough Council works in partnership with delivery partners such as Thames Valley Police to improve road safety through enforcement of motoring offences including speeding, dangerous driving and other offences such as cycling on footways and cycling without lights. Targeted education and campaigns promoting responsible motoring and safe cycling are supported by Reading Borough Council and Thames Valley Police. The Council also offers cycle training for both adults and children to enable them to improve their skills and cycle for local journeys.

Road Safety Audits

The Council adopts the formal three stage procedure in the Highways Agency Standard HD 19/03²² entitled Road Safety Audits which takes into account all road users. The three stages identified in the advice note and standard are to undertake a safety audit upon completion of the preliminary design, upon completion of the detailed scheme and upon completion of construction.

In addition, accident data issued by the Police is monitored to identify any trends in accidents and casualties for all road users and help inform the annual Road Safety Programme that is agreed by Members as reported to the Traffic Management Sub-Committee. The Council will continue to apply this procedure assessing the impact on all road users rather than carrying out individual audits for each road user group.

6. PARTNERSHIP, CONSULTATION & COMMUNITY ENGAGEMENT

The Council values feedback from cyclists representing the different design categories outlined in National Guidance (LTN 1/12⁸), including commuters, utility cyclists, inexperienced and/or leisure cyclists, children and users of specialised equipment, including trailers, adaptable bikes and tag-a-longs. This information is useful when considering improvements to the network and identifying suitable options for further consideration.

How we work and communicate with internal and external stakeholders to ensure that schemes are delivered to meet local needs and encourage more people to cycle is outlined below. However, due to continuing reductions in revenue expenditure imposed by central government and fewer available staff, and for the need for these cuts to be shared across all Council activities, we will need to review the structure of future consultation arrangements whilst retaining our commitment to active public engagement.

Community Engagement

The Council will collect information from participants of active travel initiatives including workplace cycle challenges, Bike It, Bikeability and sessions run as part of the CTC Behavioural Change programme through a range of **surveys and feedback**. This information will help us better understand the needs of hard to reach groups such as families and disability groups when considering cycling as a form of transport.

Substantial information is being collected on how people currently travel and the barriers to cycling, walking and using public transport through the **Personalised Travel Planning programme**. This programme involves the dissemination of travel information at places of work and residential properties as well as the incentive to try new modes by distributing cycle locks, lights and other items aimed at encouraging sustainable travel. So far, Travel Advisors have held conversations with over 9,000 residents on their doorstep and 4,000 employees at their workplace.

Residents and people working and visiting Reading will have the opportunity to comment on schemes, particularly those involving statutory consultation via the corporate website or in writing. Schemes will be added to the Council's consultation webpage and available for all to view prior to the implementation of schemes. We will engage with **Neighbourhood Action Groups** to promote cycling and address priority areas such as cycling on pavements.

Leisure cycling is seen as an easy, accessible, social activity which people can carry out with family and friends as well as for health and fitness reasons. The publication of our leisure rides map targets these types of cyclists and encourages them to undertake cycling for other local journeys with less time constraints than commuting trips.

We will encourage more families to cycle for leisure and other purposes, creating a positive attitude towards cycling which may then be transferred into other trips.

Stakeholder Meetings

The Cycling Strategy 2008 supported a Cycle Forum made up of cycling groups to identify improvements to the cycling network. Therefore, infrastructure measures have increasingly been suggested through these consultative meetings attended by the public and representatives from local cycle groups, investigated by officers and recommended for implementation as part of the LSTF programme² where appropriate.

We are now proposing to host community workshops held in neighbourhoods to better understand the issues communities experience when travelling locally and what we can do to encourage them to cycle for such trips or use other sustainable modes. These workshops will enable us to engage with local people who do not currently cycle or do so infrequently. Proposed schemes will be shared with local groups and other stakeholders as described in this Strategy.

Partnerships

We will work in partnership with other departments in the council as well as other organisations to deliver proposals and to monitor their success. This will range from: working with Planning to ensure that cycle facilities are considered when planning applications are received, liaising with Public Health to integrate cycling into health policies such as those focussing on healthy weight and physical activity to Parks and Street Care who have important role to play when creating better conditions for cycling. Other teams working within neighbourhoods, including schools and other services will also have an important contribution in terms of promoting cycling within communities.

Key external stakeholders whom we will work with to deliver joint objectives include the Local Enterprise Partnership, University of Reading, neighbouring local authorities, transport operators and Thames Valley Police.

Local cycle groups Reading Cycle Campaign, Reading CTC and Sustrans will be invited to comment on plans produced by the Council based on the policies in this strategy and any subsequent plans. These groups already deliver measures related to the promotion of cycling and training through their membership and participation in events such as Bike Week.

We are currently working with CTC to deliver the LSTF Behavioural Change programme, an extension to the previous Cycling Champions Programme. The organisation also secured funding to deliver Bike Clubs across Reading from the Sustainable Challenge Fund.

National walking and cycling charity, Sustrans recognises the importance of Reading as a regional hub. We will work with Sustrans to improve cycle facilities for all users and encourage participation and engagement through projects such

as: 'Bike It', Pocket Places for People and the volunteer programme focusing on the maintenance of local and national cycle routes.

Two local cycle shops have supported the Reading Cycle Map, which includes details of their shops on the individual route maps. We hope to continue to work with these and other local cycle shops on relevant elements such as initiatives and interventions, including campaigns promoting the use of lights on bikes.

Equality Impact Assessment

An Equality Impact Assessment (EIA) has been undertaken as part of the development of this document. Under the Equality Act 2010, Section 149 a public authority must have due regard to the need to:

- eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Act
- advance equal opportunity between persons who share a relevant characteristic and persons who do not share it
- foster good relations between persons who share a relevant protected characteristic and persons who do not share it.

In addition, an Equality Impact Assessment will be carried out for individual or packaged proposals as relevant to assess whether vulnerable road users and other protected groups are affected and if so that these impacts are mitigated or minimised.

7. FUNDING

Local authorities are able to use a range of financial sources to fund their transport improvement programmes.

Where appropriate we will use capital and revenue from the council's own resources to accelerate delivery of key elements of the programme and support the initiatives being implemented. Where opportunities exist to bid for challenge funding that will enable earlier delivery of components of our Cycling Strategy, these will be pursued.

Integrated Transport & Maintenance Block Grants

Local authority expenditure on smaller capital projects is supported by central government through the Integrated Transport Block and the Maintenance Block grants. A proportion of the funding available from these sources will continue to be focused on local safety, traffic management, and on multi-targeted neighbourhood enhancement schemes as well as on highway and footway surface treatments. Designing for cyclists will be incorporated into all relevant measures.

The future of the Integrated Transport Block is unclear as it is partially being devolved through the Single Growth Fund to Local Enterprise Partnerships (LEP's) and the allocation of Single Growth Fund will be through a competitive process based on LEP's Strategic Economic Plans. The remaining ITB funding to be allocated by DfT is subject to the results of a consultation undertaken in March 2013. We will continue to work alongside the LEP to identify funding opportunities that support both our local objectives and meet the emerging LEP Growth Strategy.

Local Sustainable Travel Fund Programme

The Council successfully secured nearly £26 million from the Department for Transport's Local Sustainable Transport Fund² to deliver a range of transport improvements. The funding awarded can be broken down into revenue funding enabling the Council to maintain existing assets and secure services promoting cycling and capital to provide new infrastructure, including the new pedestrian and cycle bridge. Post 2015 funding is not yet determined, therefore **we will continue to review funding opportunities that will enable us to continue the delivery of existing initiatives as well as new revenue based projects.**

Other Local Authority Capital Funds

Any capital grants and other capital receipts not otherwise identified for a specific purpose can be used by the Council to fund transport measures. Priorities can be set locally but transport investment must compete with other Council service areas for these funds. From time to time national and EU capital challenge funds are established for specific purposes (recent examples have included the Cycle City Ambition Grants to support the introduction of cycle infrastructure improvements) for which local authorities may submit bids. The bidding process can be resource intensive and this needs to be considered prior to application to ensure that schemes can be delivered within the identified timescale and existing resources.

Developer Contributions

Funding may be secured from the private sector, through legally binding agreements made under the Town & Country Planning Act 1990, to mitigate the transport impact, including safety issues, of a development. Funds can be collected by a local authority towards specific schemes needed to mitigate transport demands generated by a new development or towards a larger scheme or strategy required to allow a range of developments to be accommodated.

Revenue Expenditure

Many types of transport investment require capital expenditure to establish the facilities and some form of revenue or current expenditure to operate and maintain the asset. Local authorities receive government support for current expenditure on local services through formula grant. This is a combination of Revenue Support Grant (RSG) and allocations of non-domestic (business) rate payments that are redistributed using a formula based on local needs and demographics. A council can use any of the non-ring-fenced funding to support the delivery of local, regional and national priorities in their area including, for example, cycle improvements and initiatives. The Local Sustainable Transport Fund² is a recent example of a revenue challenge fund. In addition, the Council will work closely with other departments to secure funding to promote cycling and improve the cycle network such as via the Council's public health function.

Other Income

Powers for local authorities to introduce demand management measures involving charging (pay and display, bus lane and parking enforcement schemes) were included in the Transport Act 2000. Any net revenues from such schemes must be invested in local transport. Originally, those revenue streams were to be hypothecated for a period of 10 years. However, the Local Transport Act 2008 (Schedule 5, Section 109) extended the requirement for the revenue streams to be used for local transport throughout the life of any scheme.

We will explore all opportunities to deliver the cycling policies we propose and seek a balanced financial package which utilises UK and EU funding and maximises private sector contributions alongside public sector finance.

8. IMPLEMENTATION

This section outlines how the policies detailed in this Strategy will be applied over the five-year period and the approval process to which they will be progressed. This section also includes how future guidance will be integrated into the Strategy on the design and promotion of cycling to facilitate growth in the number of people cycling for everyday journeys and for leisure purposes.

Implementation Plan

As set-out in Section 6 - Partnership, Consultation and Community Engagement, we will consult with residents and key stakeholders both formally and informally through various consultative channels. Improvements identified through these channels will be prioritised through a Matrix evaluating schemes based on six objectives for the Local Sustainable Transport Fund programme²:

- support local economy and facilitate economic development
- help deliver wider social and economic benefits
- reduce carbon emissions
- improve safety
- promote increased physical activity and the health benefits
- improve air quality and wider environmental benefits

This prioritisation list will inform the annual Cycling Strategy programme to be reported annually to the Traffic Management Sub-Committee in the form of an Implementation Plan. The Implementation Plan will set out progress within the previous financial year and the programme for the subsequent year. This will include actual spend, deliverables and monitoring information for the previous year, including achievement against Bikeability targets, information on accidents spanning the previous 3 year period and cycle data for on and off-road count sites. Available budget, priorities and targets for the current year will also be set out in the Implementation Plan. Actions included in Cycling Strategy 2008 and not delivered will be considered for inclusion under this Strategy and be reported in appropriate Implementation Plans.

Progress on this Strategy will be reported annually through an Implementation Plan and will include targets for the following financial year.

Application of Policies

The policies detailed in this document will be applied to the design of schemes on the Public Highway to ensure they meet the five basic design principles outlined in section 4. Contractors working on behalf of the Council will also be expected to design schemes according to these policies.

Key stakeholders, including local cycling representatives, will be offered the opportunity to comment on plans through informal meetings with the aim of gauging their opinions on schemes developed through this Strategy and the detailed policies, as and when needed.

Subject to Approval

All schemes designed for delivery on the Public Highway are subject to consultation with the Lead Member for Strategic Environment, Planning and Transport as well as individual Ward Councillors. Such schemes will be reported to the Traffic Management Sub-Committee prior to implementation.

The Council has a Statutory Duty to consult when introducing new Traffic Regulation Orders such as parking restrictions, footpath conversions and the creation of one-way streets, turning restrictions and road closures under the Cycle Tracks Act 1984, Highways Act 1980 and the Road Traffic Regulation Act 1984. This consultation includes advertisements in the local newspaper and on-street and notifying relevant statutory consultees such as the Emergency Services where relevant.

Policy Updates

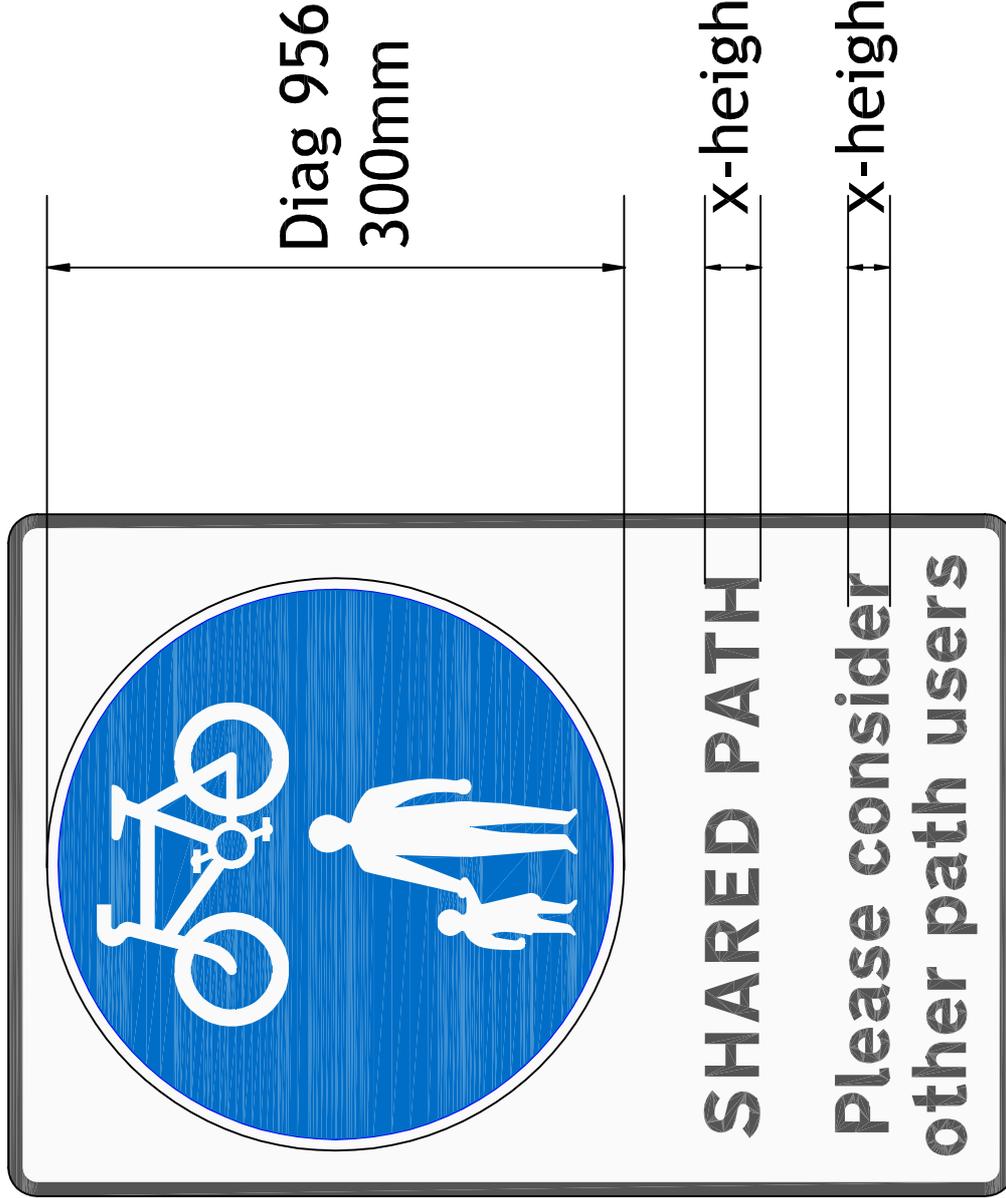
The policies detailed in this Strategy will be reviewed to ensure they reflect best practice and national guidance issued by the Department for Transport and other organisations recognised as experts in cycling infrastructure design and the promotion of cycling. Any future policy updates will be available for consultation via the Council's website and reported through the Committee process.

APPENDIX A

List of Technical Drawings:

Drawing No.

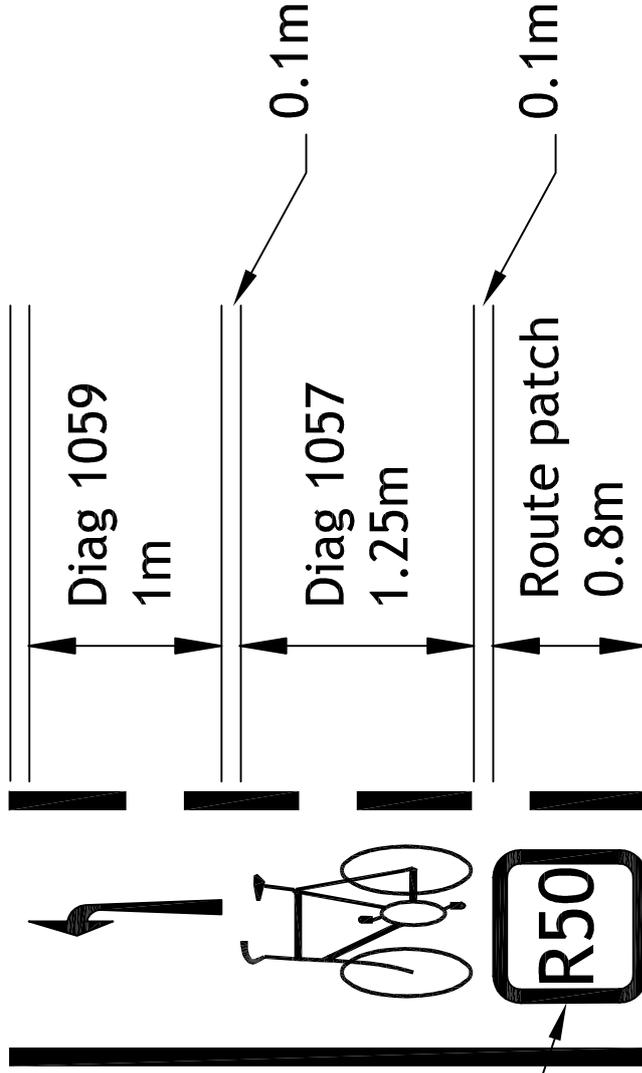
001	Shared-Use Sign with Additional Text
002	Route Number Road Markings
003	Cycle Lanes at Junction
004	Cycle Lanes at Traffic Islands
005	Cycle Symbols at Traffic Islands
006	Cycle Lane without Centre Line
007	Advanced Stop Line with Lead-In
008	Advanced Stop Line at Junction
009	Contra-Flow Cycle Lane with One-Way 'Plug'
010	Cycle Lanes at Parking Bays
011	Cycle Symbols at Parking Bays



EXAMPLE

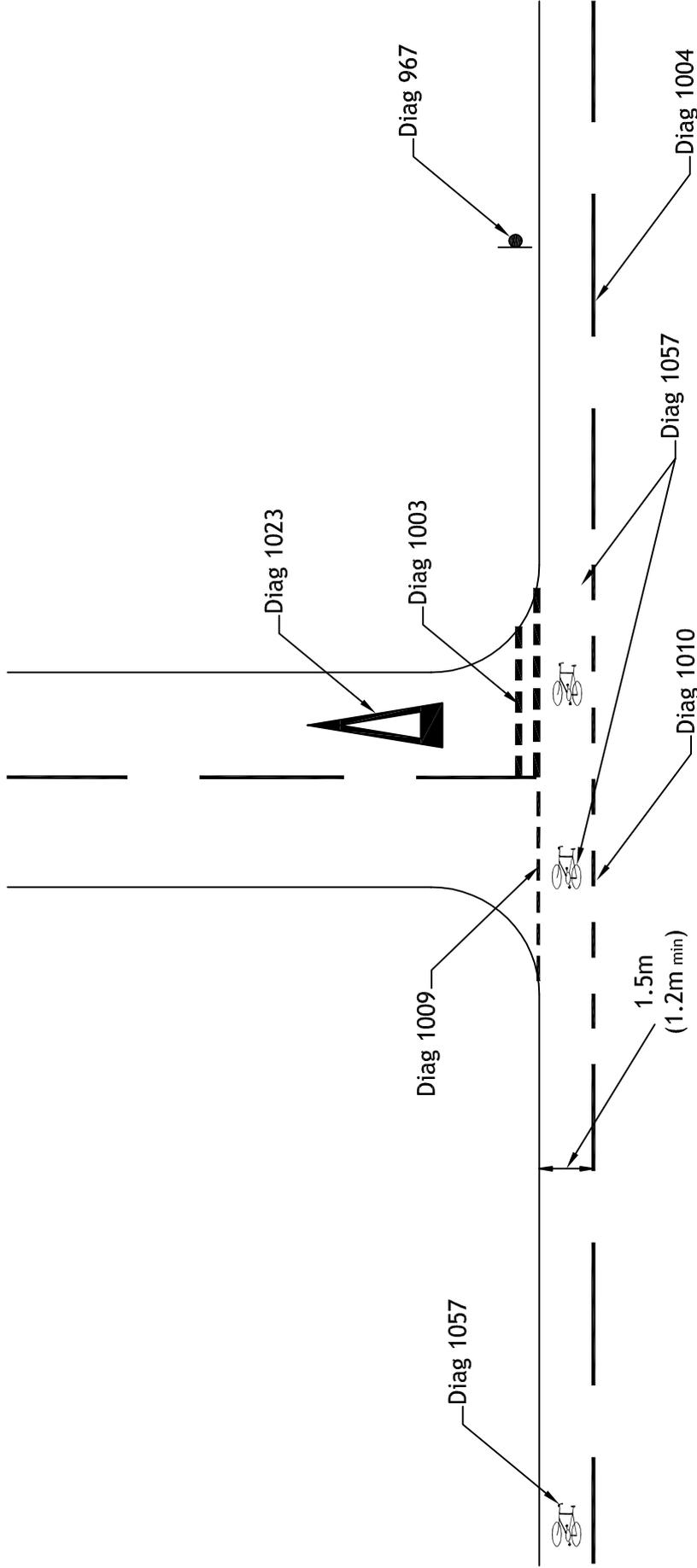
Department of Environment Culture and Sport Civic Centre Reading RG1 7AE	Project	Scale	Drawn	GW
	Reading Cycling Strategy	NTS	Checked	EB
	Drawing	Date	Approved	SB
	Shared use sign	Drawing No.		001

White number and border



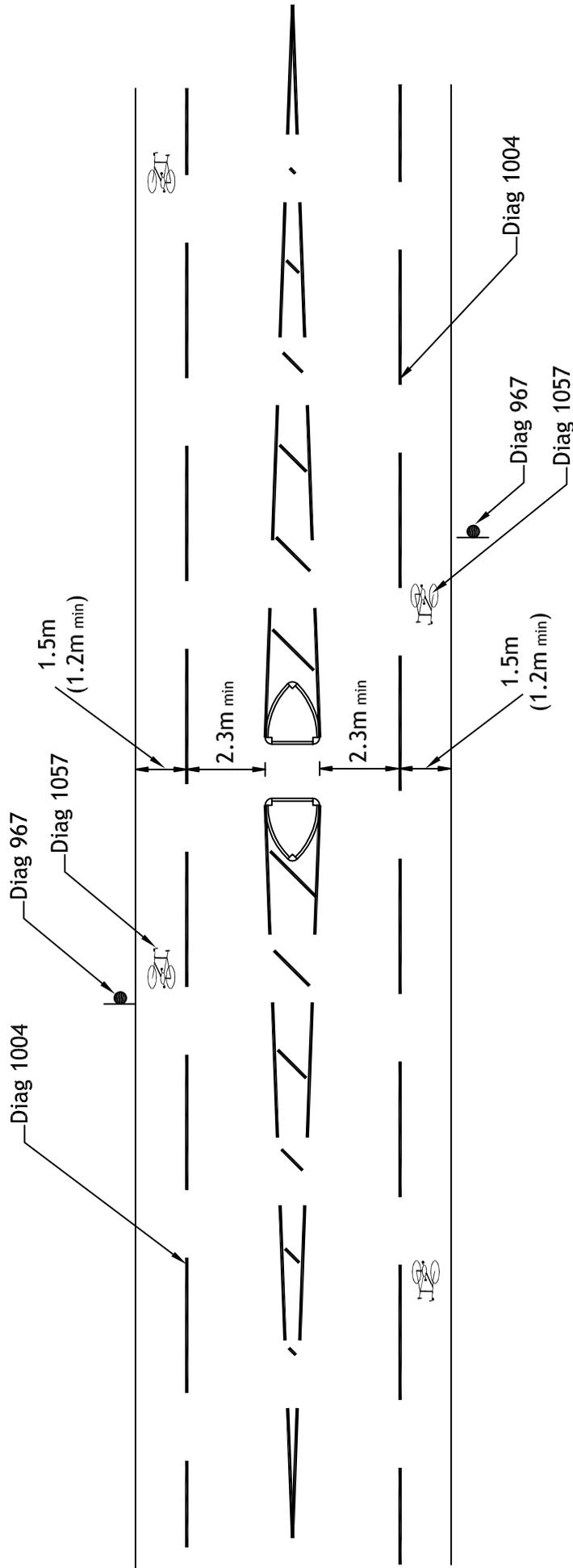
EXAMPLE

Department of Environment Culture and Sport Civic Centre Reading RG1 7AE	Project		Scale	Drawn	GW
	Reading Cycling Strategy Drawing Route Number Road Markings		NTS	Checked	EB
 Reading Borough Council Working better with you			Date	Approved	SB
			21.06.13	Drawing No. 002	



EXAMPLE

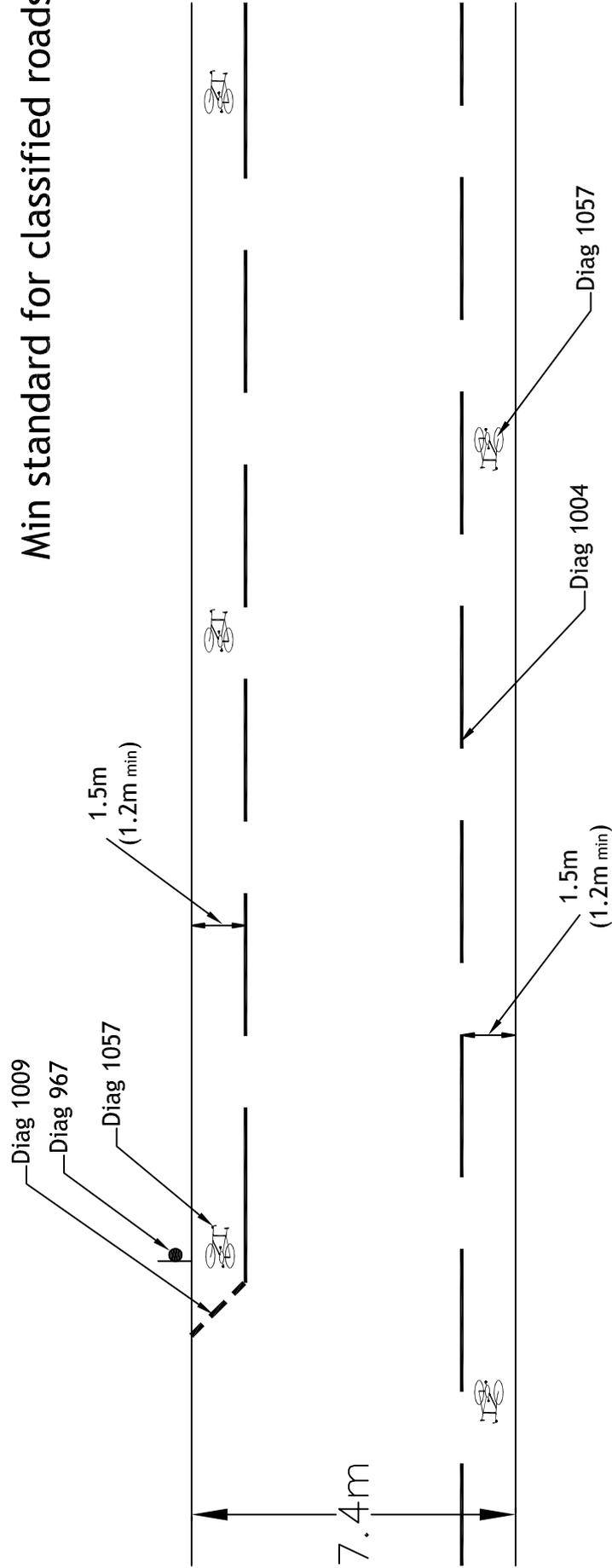
Department of Environment Culture and Sport Civic Centre Reading RG1 7AE	Project Reading Cycling Strategy		Scale NTS	Drawn GW
	Drawing Cycle Lanes at Junctions		Date 21.06.13	Checked EB Approved SB
 Reading Borough Council Working better with you		Drawing No. 003		



EXAMPLE

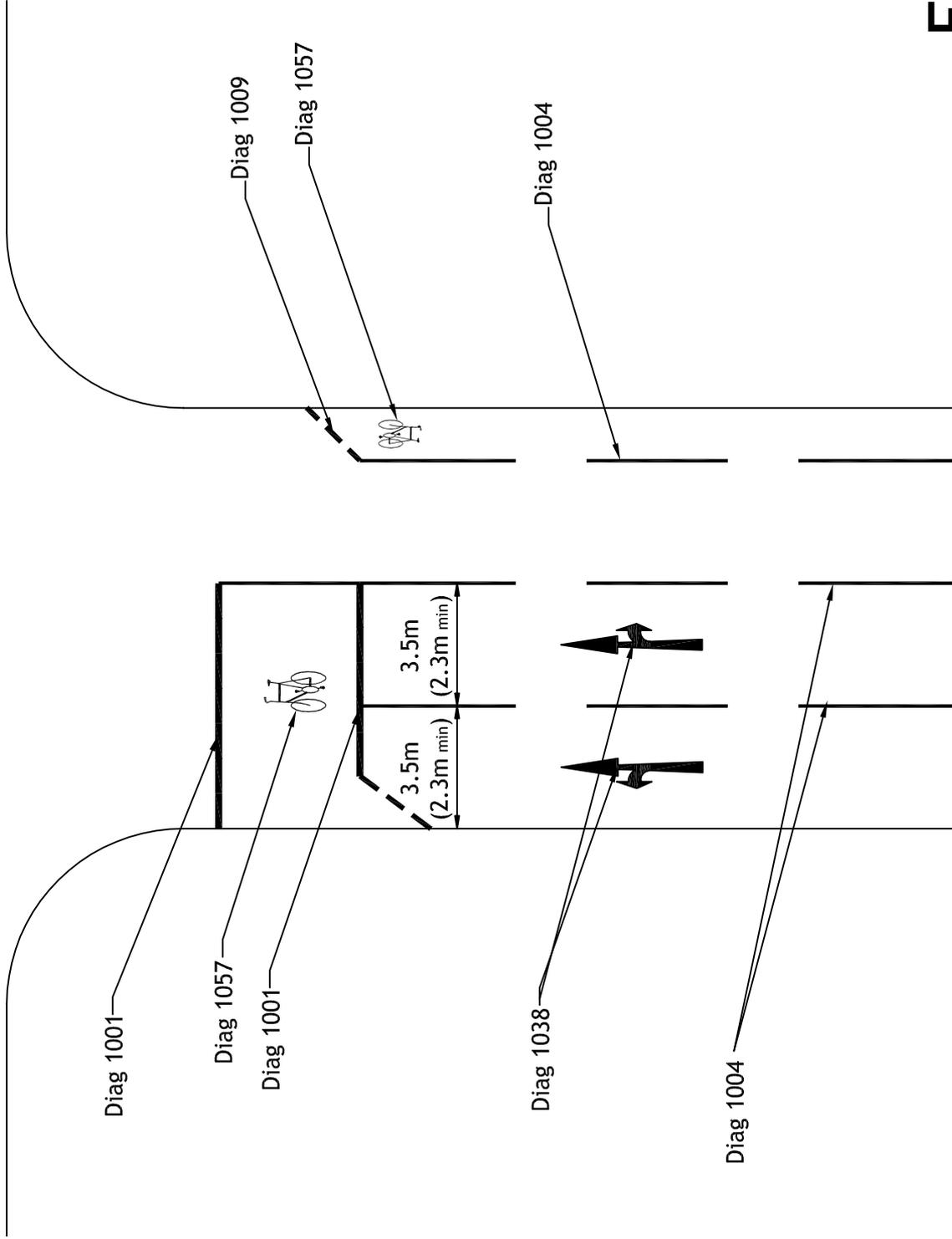
Department of Environment Culture and Sport Civic Centre Reading RG1 7AE	Project Reading Cycling Strategy		Scale NTS	Drawn GW
	Drawing Cycle Lanes at Traffic Islands		Date 21.06.13	Checked EB
 Reading Borough Council Working better with you	Drawing No. 004		Approved SB	

Min standard for classified roads



EXAMPLE

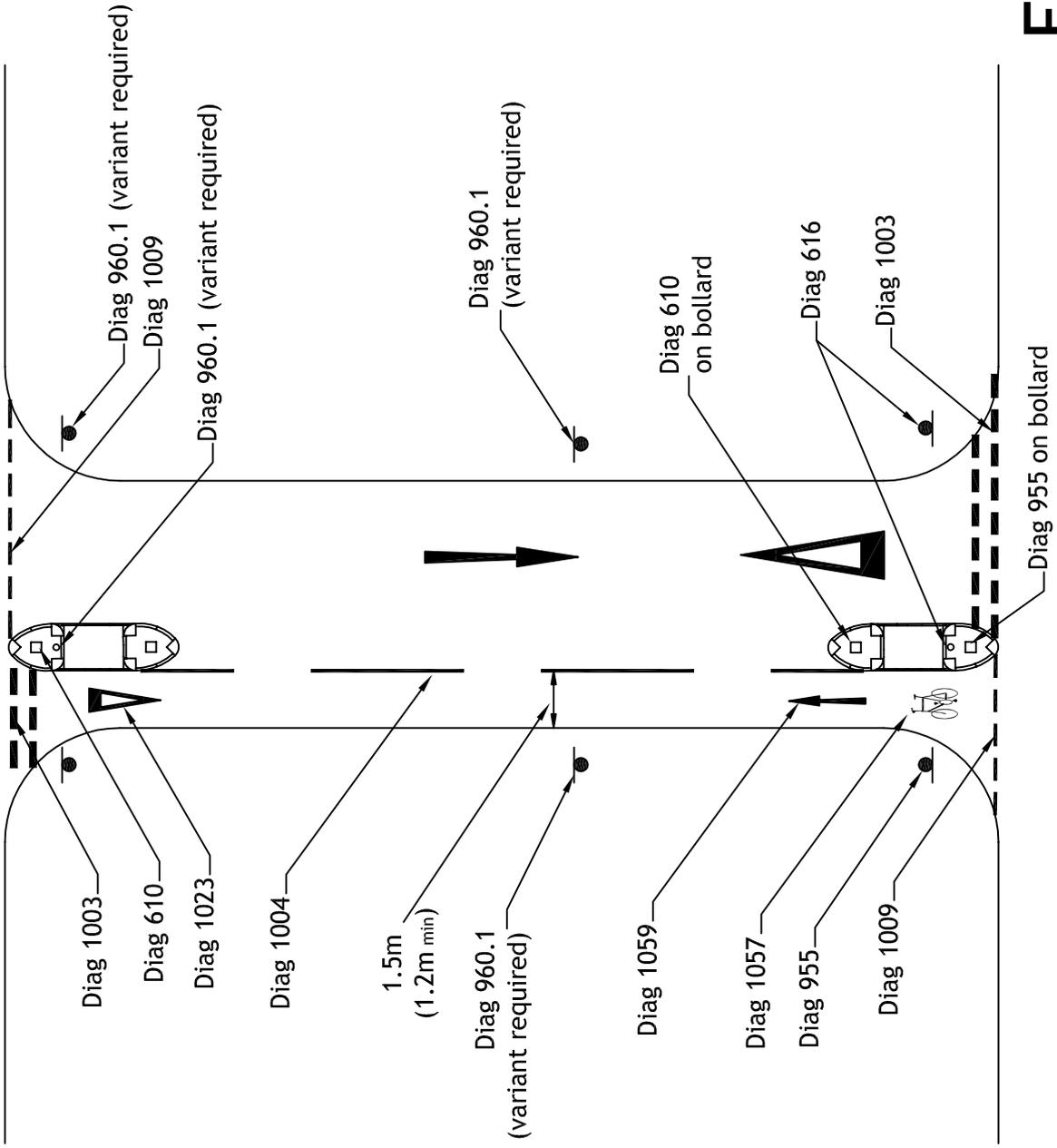
<p>Department of Environment Culture and Sport Civic Centre Reading RG1 7AE</p>  <p>Reading Borough Council Working better with you</p>	Project	Scale	Drawn	GW
	Reading Cycling Strategy	NTS	Checked	EB
	Drawing	Date	Approved	58
Cycle Lane without Centre Line		Drawing No.		006



EXAMPLE

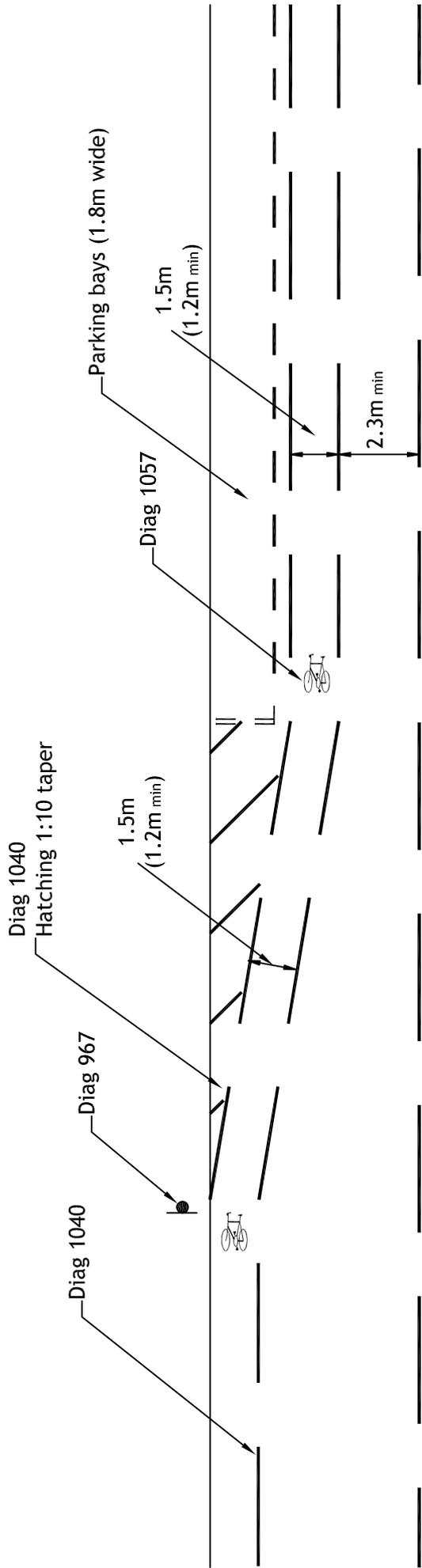
Project	Scale	Drawn	GW
	NTS	Checked	EB
Reading Cycling Strategy	Date	Approved	58
	21.06.13	Drawing No.	
Drawing	Advanced Stop Line at junctions		
			008

Department of Environment
 Culture and Sport
 Civic Centre
 Reading
 RG1 7AE



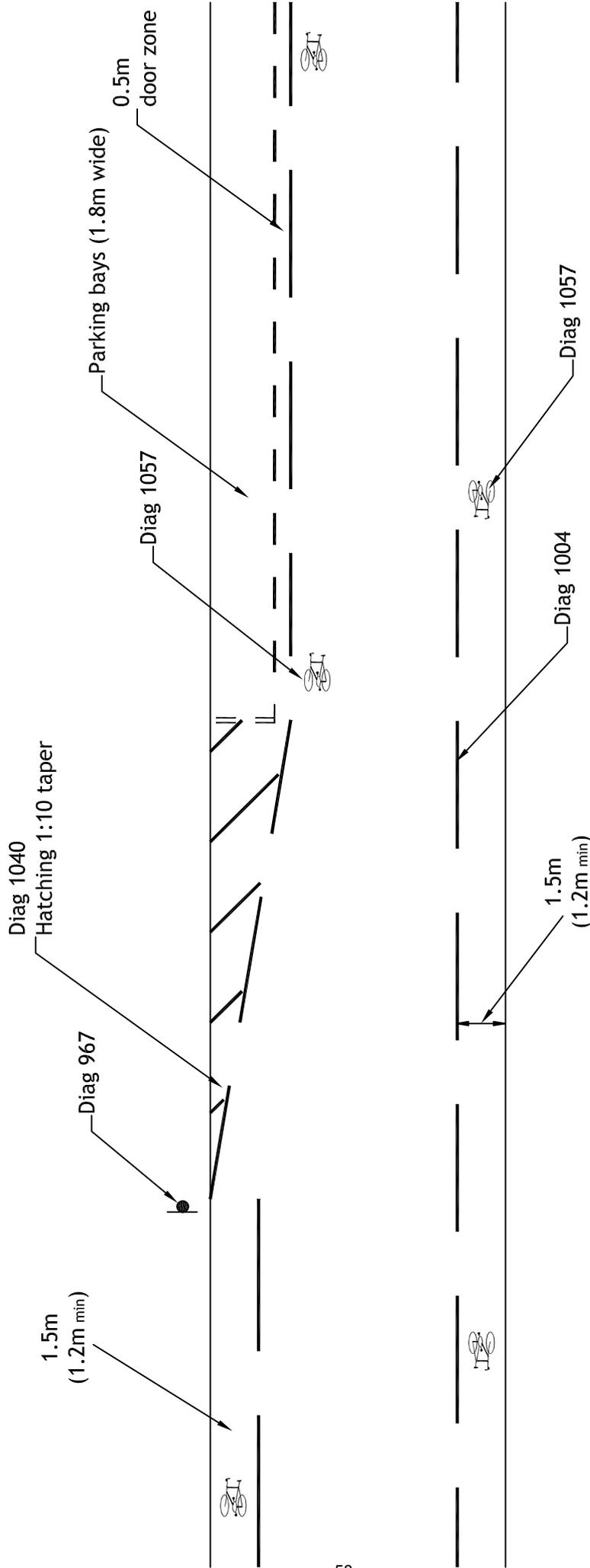
EXAMPLE

Department of Environment Culture and Sport Civic Centre Reading RG1 7AE	Project	Scale	Drawn	GW
	Reading Cycling Strategy	NTS	Checked	EB
Drawing Contraflow Cycle Lane (one way plug)	Date	21.06.13	Approved	SB
	Drawing No.	009		



EXAMPLE

Department of Environment Culture and Sport Civic Centre Reading RG1 7AE	Project Reading Cycling Strategy	Scale NTS	Drawn GW
	Drawing Cycle Lanes at Parking Bays	Date 21.06.13	Checked EB Approved SB
 Reading Borough Council Working better with you	Drawing No. 010		



EXAMPLE

Department of Environment Culture and Sport Civic Centre Reading RG1 7AE	Project		Scale	Drawn	GW
	Reading Cycling Strategy		NTS	Checked	EB
 Reading Borough Council Working better with you	Drawing		Date	Approved	58
	Cycle Symbols at Parking Bays		21.06.13	Drawing No.	
				011	

REFERENCES

- ¹ Reading Borough Council (2008) Cycling Strategy 2008. <http://www.reading-travelinfo.co.uk/cycling/cycling-strategy.aspx>
- ² Reading Borough Council (2011) Local Sustainable Transport Fund - Partnership Bid. <http://www.reading.gov.uk/council/strategies-plans-and-policies/TransportStrategy/Istfbid/>
- ³ Reading Borough Council (2011) Local Transport Plan 3 2011-2026. <http://www.reading-travelinfo.co.uk/local-transport-plan.aspx>
- ⁴ All-Party Parliamentary Cycling Report (2013) Get Britain Cycling - Report from the Inquiry. http://allpartycycling.files.wordpress.com/2013/04/get-britain-cycling_goodwin-report.pdf
- ⁵ Reading Borough Council (2011) Sustainable Community Strategy: A Vision for Reading in 2030 and beyond. <http://www.reading.gov.uk/council/reading-s-sustainable-community-strategy/>
- ⁶ Reading Borough Council (2006) Local Transport Plan 2006-2012. <http://www.reading.gov.uk/council/strategies-plans-and-policies/TransportStrategy/local-transport-plan-2006-2011/>
- ⁷ Department for Transport (2008) Local Transport Note - Cycle Infrastructure Design 02/08. <https://www.gov.uk/government/publications/local-transport-notes>
- ⁸ Department for Transport (2012) Local Transport Note - Shared Use Routes for Pedestrians and Cyclists 01/12. <https://www.gov.uk/government/publications/shared-use>
- ⁹ Department for Transport (1997) Design Manual for Roads & Bridges Volume 6, Section 2, Part 3. <http://www.dft.gov.uk/ha/standards/dmrb/vol6/section2/ta7897.pdf>
- ¹⁰ Chartered Institution of Highways and Transportation (2010) Manual for Streets 2 - Wider Application of the Principles. <https://www.gov.uk/government/publications/manual-for-streets-2>
- ¹¹ Department for Transport (2011) Creating Growth, Cutting Carbon - Making Sustainable Local Transport Happen. <https://www.gov.uk/government/publications/creating-growth-cutting-carbon-making-sustainable-local-transport-happen>
- ¹² National Institute for Health and Clinical Excellence (2013) Walking and Cycling Public Health Briefing. <http://publications.nice.org.uk/walking-and-cycling-phb8/what-can-local-authorities-achieve-by-encouraging-walking-and-cycling>

- ¹³ Sky (2011) The British Cycling Economy: Gross Cycling Product Report. http://corporate.sky.com/documents/pdf/press_releases/2011/the_british_cycling_economy
- ¹⁴ British Telecom and National Business Travel Network (2006) Case Study: Workstyles, Flexible working provides a better work life balance, reduces environmental impact, cuts costs and improves customer focus. National Business Travel Network. <http://ways2work.bitc.org.uk/pool/resources/nbtn-casestudy-bt.pdf?source=nbtn>
- ¹⁵ Office of National Statistics (2013) 2011 Census: Method of travel to work. <http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-295663>
- ¹⁶ Department for Transport (2011) National Travel Survey. <https://www.gov.uk/government/publications/national-travel-survey-2011>
- ¹⁷ World Health Organisation (2013) Health Economic Assessment Tool. <http://www.heatwalkingcycling.org/>
- ¹⁸ European Commission (2012) European Policy Brief: SPREAD Sustainable Lifestyles 2050. http://ec.europa.eu/research/social-sciences/pdf/policy-briefs-spread-november-2012_en.pdf
- ¹⁹ Transport for London (2012) Moving leisure cyclists into commuting by bicycle/utility cycling. <http://www.tfl.gov.uk/assets/downloads/customer-research/leisure-cyclists-report.pdf>
- ²⁰ Reading Borough Council (2011) Revised Parking Standards & Design. <http://www.reading.gov.uk/businesses/Planning/planning-policy/supplementary-planning-guidance-and-documents-topics/parking-standards-design-supplementary-plannin/>
- ²¹ Department for Transport (2003) Traffic Signs Regulations and General Directions 2002. London Stationery Office
- ²² Department for Transport (2003) HD 19/03: Assessment and Preparation of Road Schemes. <http://www.dft.gov.uk/ha/standards/dmr/vol5/section2/hd1903.pdf>