



Department
for Transport

Cycling and Walking Investment Strategy

We want to make cycling and walking the natural choices for shorter journeys, or as part of a longer journey

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Foreword



Over the past six years great progress has been made on cycling. Cycling rates have increased in areas where dedicated funding has been made available and spend on cycling has risen from around £2 per person in 2010 to £6 per person in England in 2016-17. We want to build on these successes and make walking and cycling the natural choices for shorter journeys, or as part of a longer journey. To help achieve this we have made over £1 billion of Government funding available to local bodies that may be invested in cycling and walking over the next five years. This means we have gone beyond our Manifesto commitment to invest over £200 million to make cycling safer, committing over £300 million in dedicated cycling and walking programmes alone over this Parliament. We will invest £50 million to provide a further 1.3 million children with cycling proficiency training through the Bikeability scheme, £101 million to deliver the Cycle City Ambition scheme in full, £85 million for Highways England to make improvements to 200 sections of the road network in England for cyclists, £80 million for local cycling and walking schemes through the Access Fund, and a further £30 million road safety fund, which will be used to make improvements in places along the line of the High Speed 2 route – for instance, to support traffic calming, safer junctions or better pedestrian crossings.

For too long, some have seen cycling as a niche activity, rather than a normal activity for all. If we can increase levels of walking and cycling, the benefits are substantial. For people, it means cheaper travel and better health. For businesses, it means increased productivity and increased footfall in shops. And for society as a whole it means lower congestion, better air quality, and vibrant, attractive places and communities.

Those benefits explain the Government's ambition for walking and cycling in England. We aim to double cycling activity by 2025 and each year reduce the rate of cyclists killed or seriously injured on English roads. We aim to reverse the decline in walking that we have seen over the last few years. For that to happen, we want cycling and walking to be the natural choices for shorter journeys in every urban and rural community in England. For cycling or walking to be normalised in this way, they need to be safer, and be perceived to be safe, normal and enjoyable ways to travel.

We cannot achieve these changes alone. Our ambition will be delivered only if we bring people together in local places, including local government, businesses, charities, and the public - the same approach taken in other nations, such as the Netherlands. This ambition is part of our commitment to build a society and an economy that works for all people. To achieve this, we have published guidance on the preparation of Local Cycling and Walking Infrastructure Plans. The guidance will help support local delivery partners to identify and deliver individual and tailored interventions fit for their own local areas and get the most out of existing tools, such as the Propensity to Cycle Tool. The Government will only take a lead on issues which require a national approach, such as setting the framework, and sharing knowledge and good practice.

This Strategy has not been developed in isolation. We are grateful to all the organisations in the cycling and walking sectors who have given their time to support and develop our plans.

Reaching the Strategy's long-term goal will require persistence, patience and resolution. But by working together we can transform our country's attitude to walking and cycling, positioning England as a global-leader and inspiration around the world. This Strategy - the first ever statutory Cycling and Walking Investment Strategy - marks the beginning of this transformation.

Rt Hon Chris Grayling MP
Secretary of State for Transport

Andrew Jones MP
Parliamentary Under-Secretary of State with responsibility for cycling and walking

1. The Strategy

Introduction

- 1.1 It is our ambition that cycling and walking are the natural choices for shorter journeys, or as part of a longer journey. This Government's approach to delivering our ambition for cycling and walking is one of partnership. We believe that by working closely with our partners in local bodies, the third sector, and the wider public and private sector, we can develop a strong basis for achieving our ambition for walking and cycling.
- 1.2 This partnership approach builds on existing successful partnerships with local bodies through the delivery of funding programmes such as Cycle Ambition Cities, Bikeability and the Access Fund.
- 1.3 The Department ran a public consultation on the draft Cycling and Walking Investment Strategy between 27th March and 23rd May 2016. The consultation invited respondents to provide answers on five questions around our proposed activities, and these comments have been taken into account in the development of the final Strategy.
- 1.4 This Strategy has been set out in three chapters, the first detailing our ambition for walking and cycling and the objectives to move us closer to this ambition. Chapter 2 sets out the financial resources available to support these objectives, as well as governance and performance monitoring arrangements. The final chapter describes the specific actions planned to support delivery of the ambition and objectives during the first phase of the Cycling and Walking Investment Strategy.
- 1.5 In addition to publishing the Strategy we have also published the following accompanying documents:
 - Government response to the consultation on the draft Strategy
 - Cycling and Walking Investment Strategy: Investment Inputs, Outputs and Outcomes
 - Cycling and Walking Investment Strategy: Information leaflet for members of the public

The Government's ambition for cycling and walking in England

Our ambition for England

We want to make cycling and walking the natural choices for shorter journeys, or as part of a longer journey

- 1.6 The Government wants walking and cycling to be a normal part of everyday life, and the natural choices for shorter journeys such as going to school, college or work, travelling to the station, and for simple enjoyment. As part of our aim to build a society that works for all, we want more people to have access to safe, attractive routes for cycling and walking by 2040.
- 1.7 We want to support the transformation of local areas through our ambition: change which will tackle congestion; change which will extend opportunity to improved physical and mental health; and change which will support local economies. Delivery of our ambition will see employers benefit from a healthier workforce and thriving high streets supporting local employment, whilst at the same time creating more opportunities by delivering streets which are accessible for people with reduced mobility or visual impairments.
- 1.8 Walking and cycling for just 10 minutes a day can contribute towards the 150 minutes of physical activity for adults per week, as recommended by the UK Chief Medical Officers¹. Physical activity helps to prevent and manage more than 20 chronic health conditions, including cardiovascular disease, stroke, type 2 diabetes, dementia, obesity and a variety of cancers. It is also linked to overall health benefits, such as reduced injury risk, improved quality of life, increased productivity and reduced absenteeism at work^{2 3}.
- 1.9 Realising our ambition will take sustained investment in cycling and walking infrastructure. It will take long-term transport planning and it will take a change in attitudes – amongst central Government, local bodies, businesses, communities and individuals. Walking and cycling should be seen as transport modes in their own right and an integral part of the transport network, rather than as niche interests or town-planning afterthoughts. We need to build a local commitment together to support this national Strategy.
- 1.10 If we get it right, we will increase walking and cycling overall and encourage more children to walk or cycle to school. We will have streets that are safer for walking and cycling, and a healthier country. We will be a place where cycling and walking are the norm.

¹ Start active, stay active (2011) A report on physical activity for health from the four home countries' Chief Medical Officers. London: DH.

² Claiming the Health Dividend: A summary and discussion of value for money estimates from studies of investment in walking and cycling (2014), London, DfT

³https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/523460/Working_Together_to_Promote_Active_Travel_A_briefing_for_local_authorities.pdf

1.11 This ambition needs to involve us all, engage us all, and we have a shared responsibility to make it happen.

By 2040 our ambition is to deliver:

BETTER SAFETY

'A safe and reliable way to travel for short journeys'

- streets where cyclists and walkers feel they belong, and are safe
 - better connected communities
 - safer traffic speeds, with lower speed limits where appropriate to the local area
 - cycle training opportunities for all children
-

BETTER MOBILITY

'More people cycling and walking - easy, normal and enjoyable'

- more high quality cycling facilities
 - more urban areas that are considered walkable
 - rural roads which provide improved safety for walking and cycling
 - more networks of routes around public transport hubs and town centres, with safe paths along busy roads
 - better links to schools and workplaces
 - technological innovations that can promote more and safer walking and cycling
 - behaviour change opportunities to support increased walking and cycling
 - better integrated routes for those with disabilities or health conditions
-

BETTER STREETS

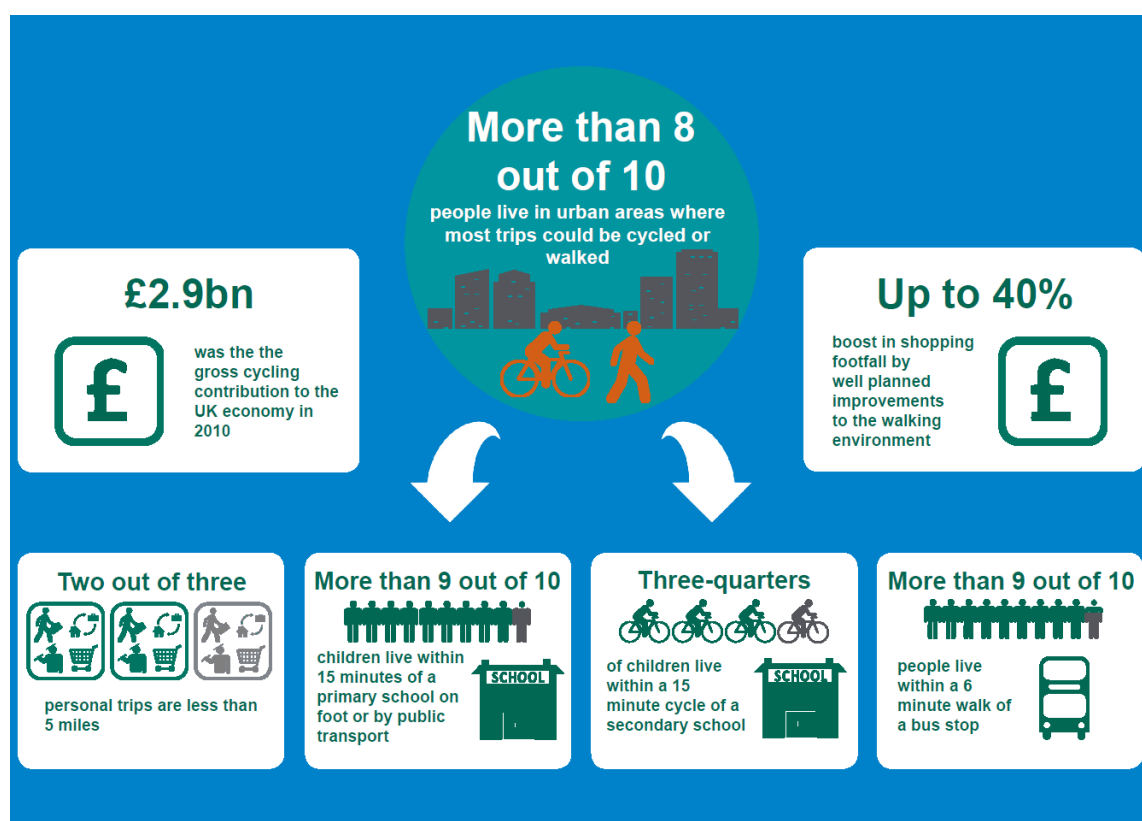
'Places that have cycling and walking at their heart'

- places designed for people of all abilities and ages so they can choose to walk or cycle with ease
 - improved public realm
 - better planning for walking and cycling
 - more community-based activities, such as led rides and play streets where local places want them
 - a wider green network of paths, routes and open spaces
-

Our objectives for walking and cycling

- 1.12 This Strategy aligns with the Spending Review 2015 period. We have set a number of objectives over that period to measure progress towards our longer-term ambition for 2040. The financial resources to support these objectives are set out in chapter 2.
- 1.13 Cycling and walking activity for the purpose of this document is measured as stages, as in the National Travel Survey. The basic unit of travel in the National Travel Survey is a trip, which consists of one or more stages. A new stage is defined when there is a change in the form of transport. Counting cycle or walking stages rather than trips allows us to include journeys that involve cycling or walking but where this is not the main form of transport (for example, cycling to a railway station to catch the train to work).
- 1.14 Our objectives are that by 2020, we will:
- increase cycling activity, where cycling activity is measured as the estimated total number of cycle stages made
 - increase walking activity, where walking activity is measured as the total number of walking stages per person
 - reduce the rate of cyclists killed or seriously injured on England's roads, measured as the number of fatalities and serious injuries per billion miles cycled
 - increase the percentage of children aged 5 to 10 that usually walk to school
- 1.15 Further to this, we have set the following aims and target, respectively, to 2025:
- We aim to double cycling, where cycling activity is measured as the estimated total number of cycle stages made each year, from 0.8 billion stages in 2013 to 1.6 billion stages in 2025, and will work towards developing the evidence base over the next year.
 - We aim to increase walking activity, where walking activity is measured as the total number of walking stages per person per year, to 300 stages per person per year in 2025, and will work towards developing the evidence base over the next year.
 - We will increase the percentage of children aged 5 to 10 that usually walk to school from 49% in 2014 to 55% in 2025.
- 1.16 As Figure 1 below shows, there is significant potential for change in travel behaviour. Two out of every three personal trips are within five miles - an achievable distance to cycle for most people, with many shorter journeys also suitable for walking. For school children, the opportunities are even greater. Three quarters of children live within a 15 minute cycle ride of a secondary school, while more than 90% live within a 15 minute walk or bus journey from a primary school.

Figure 1: The opportunities from cycling and walking⁴



1.17 As well as tracking the objectives set out above, Government will also monitor other metrics to help understand our progress towards our objectives. Additionally, the governance arrangements we will put in place will ensure that both outputs and outcomes are monitored and reported. Details of both these monitoring and governance arrangements are included in the next chapter.

⁴ DfT (2015) *Investing in Cycling and Walking: The economic case for action*; National Travel Survey 2014; Living Streets (2013) *The Pedestrian Pound*

- publication of *Sporting Future: A New Strategy for an Active Nation* by the Department for Culture, Media & Sport, which includes support for cycling and walking

3.6 Since publication of the draft Cycling and Walking Investment Strategy in March 2016 we have begun work on the four key areas below, which support the delivery of our ambition for cycling and walking:

- We are recruiting a new Cycling and Walking Expert Committee and have begun to develop a terms of reference for that Committee.
- To help local bodies develop strategic plans to improve conditions for cycling and walking we have published guidance on the preparation of Local Cycling and Walking Infrastructure Plans and will be providing a package of technical support to local bodies that wish to develop a Local Cycling and Walking Infrastructure Plan.
- We have delivered a Sustainable Transport Delivery Excellence Programme which looked to assist Local Enterprise Partnerships (LEPs) develop cycling and walking plans. In its first year (2015-16), 28 out of 38 LEPs were supported; in the second year (2016-17) 36 out of 38 LEPs were supported.
- Work is also underway to establish effective ways of sharing knowledge and lessons learned by the eight Cycling Ambition Cities, five Walking Cities and others, so that all authorities can benefit from their experience and learning.

3.7 Additional activities that have commenced since the publication of the draft Strategy in March include:

- launching a further round of the Local Growth Fund and distributing funding to Local Enterprise Partnerships to support their strategic economic plans
- revising the Traffic Signs Regulations and General Directions (TSRGD), which came into force in April 2016, to include many new measures which will benefit cyclists and pedestrians
- Sport England publishing *Towards an Active Nation*¹⁸ and creating a new dedicated fund of £120 million up to 2020-21 to tackle inactivity
- the Department of Health publishing *Childhood Obesity: A Plan for Action*¹⁹ which includes support for cycling and walking
- Highways England publishing *Cycle Traffic and the Strategic Road Network* Interim Advice Note (IAN) 195/16; the IAN ensures that the needs of cyclists are accommodated in all future schemes and that infrastructure facilitates the convenient and safe movement of cyclists along or across the strategic road network

¹⁸ <https://www.sportengland.org/media/10629/sport-england-towards-an-active-nation.pdf>

¹⁹ <https://www.gov.uk/government/publications/childhood-obesity-a-plan-for-action>

- Legislation has been presented to Parliament to increase penalties for drivers using a handheld mobile. This came into effect on 1st March 2017, alongside a major Think! Campaign.
- A major piece of research on young driver safety has been commissioned.
- We have consulted on improving compulsory basic training for motorcyclists and allowing learner drivers on motorways.
- We have continued to push forward on drug driving, which has led to around 10,000 arrests.
- The Driving and Vehicle Standards Agency has trialled a new practical car driving test, to improve new driver safety.

Strategic Road Network

- 3.24 The Department will continue to work closely with Highways England to maximise the impact of their Cycling Strategy, which was published in 2016. This will enable cycle-proofing of the strategic road network and reduce any severance from new road schemes by enhancing access for a variety of users, including pedestrians, horse riders, and people with disabilities or health conditions. Highways England is also committed to upgrading and increasing the number of safe crossings on the network in the interests of the safety and convenience of more vulnerable road users, as well as ensuring they integrate with other networks, including local roads, and existing and emerging rail links.
- 3.25 To date, Highways England has made good progress against the commitment to invest £100m on cycling from the £250m fund ring-fenced for cycling, safety and integration. As of mid-December 2016, 35 schemes have been delivered, with plans well in development to deliver the remaining funds up until March 2021 inclusive.
- 3.26 To support the wider outcome of addressing severance, and to improve connectivity between communities alongside and around the strategic road network, Highways England is also delivering a number of other activities:
- Work is continuing to refine the approach to appraising, monitoring and evaluating cycling investment opportunities, to ensure that good quality schemes are delivered. In turn this will help inform a review of Highways England's cycling performance indicators, to ensure they are meaningful and easily understood. The new approach will be tested in 2017-18 to ensure it is fit for purpose.
 - Highways England continues to work closely with a range of stakeholders representing the views of vulnerable users, including cyclists. This includes national engagement on development of their overall approach, as well as local engagement regarding specific scheme opportunities and issues.
 - Highways England recognises the need for cycling investment to positively contribute to local cycle networks. To support this they have been testing network planning approaches with specific local highways authorities to ensure that Highway England's investment supports the ambitions of local authorities, as set out in their Local Cycling and Walking Infrastructure Plans (LCWIPs), as well as Government. Once fully developed they will implement this approach more widely.

HS2 Road Safety Fund

- 3.27 In October 2016, the Department announced the creation of a £30 million road safety fund, which will be used to make improvements in rural areas along the line of the High Speed 2 route – for instance, to support traffic calming, safer junctions or better pedestrian crossings all of which will benefit facilities for cycling and walking. During 2017 we will be developing individual allocations for local authorities.

Traffic Regulation Orders (TROs)

- 3.28 The Department is considering how to improve the TRO-making process with the aim to make it simpler and easier for local authorities to ban pavement parking where they consider it appropriate.

20mph and 40mph Speed Limits

- 3.29 In order to assist local bodies in their determination of the role of 20mph and 40mph zones and limits, the Department has commissioned Atkins, AECOM and Professor Mike Maher from University College London to carry out a research project into the effectiveness of 20mph speed limits, with this study due to be completed by the end of 2017. The study will consider a range of outcomes, including speed, collisions, injury severity, mode shift, quality of life, community, economic public health benefits and air quality. It will also examine drivers', riders' and residents' perceptions of 20mph speed limits and assess the relative cost/benefits to specific vulnerable road user groups, including cyclists.

Tactile Paving

- 3.30 The Department will commission a project to update two guidance documents relating to accessibility. These are the Department's guidance on the use of tactile paving and its broader guidance on accessibility related design, which is known as inclusive mobility.

Refresh of Cycle Infrastructure Design

- 3.31 The revised Traffic Signs Regulations and General Directions 2016 covered many new cycling and walking measures, including new designs for Advanced Stop Lines (ASLs), cycle 'early start' signals, a new parallel pedestrian and cycle crossing, and low-level mini cycle signals. To reflect these changes, we will consider how to refresh the Department's guidance in *Local Transport Note 2/08: Cycle Infrastructure Design* to ensure that councils can continue to design good, safe schemes in accordance with legislation.

Partnership

Local Cycling and Walking Infrastructure Plans (LCWIPs)

- 3.32 In order to help local bodies that are interested in increasing cycling and walking in their local areas, we have published guidance on the preparation of Local Cycling

and Walking Infrastructure Plans. The guidance will enable local bodies to take a more strategic approach to improving conditions for cycling and walking in order to support increases in travel on foot and by cycling, by:

- understanding existing and future travel patterns, and the barriers and enablers to increasing cycling and walking
- identifying and mapping a recommended cycling network and core walking zones that will become the primary focus for infrastructure improvements
- creating a prioritised pipeline of enhancements to ensure infrastructure effectively supports growth in cycling and walking, and contributes towards meeting broader local goals

Technical Support for Local Bodies

- 3.33 A programme of technical support for local authorities, LEPs and delivery partners has been launched to help them to develop a Local Cycling and Walking Infrastructure Plan. This programme makes available resources to support the development of cycling and walking networks, including scheme identification and prioritisation of delivery. The programme will also focus on improving sharing of knowledge and lessons learned by the eight Cycling Ambition Cities, five Walking Cities and others, so that authorities can benefit from their experience and learning. This will include a three year programme of events, seminars and conferences to support sharing good practice between local bodies.

Propensity to Cycle Tool

- 3.34 The Department-funded Propensity to Cycle Tool (PCT) is a free, open source strategic planning tool that has been developed in partnership with four universities: Cambridge, Leeds, Westminster and the London School of Hygiene & Tropical Medicine. The tool has been designed to assist transport planners and policy makers in the planning of cycling networks and identification of interventions to promote cycling. The tool comprises an interactive map that shows the current and potential future distribution of commuter cycling trips under different potential future growth scenarios. It provides numerical and graphical outputs, including estimated numbers of cyclists in an area, and along desire lines and routes.
- 3.35 The Propensity to Cycle Tool can assist with the preparation of Local Cycling and Walking Infrastructure Plans and will be of particular assistance in defining potential demand for cycling, identifying the most promising routes and areas for investment, and estimating future capacity needs for route and area-based measures. Further information about how the tool can be used to support the preparation of Local Cycling and Walking Infrastructure Plans is included in the Department's Local Cycling and Walking Infrastructure Plan guidance.

National Air Quality Plan for Nitrogen Dioxide

- 3.36 Air quality has improved significantly over recent decades and the UK currently meets the limit values for almost all pollutants. But we know there is still more to do and the UK faces significant challenges in meeting limit values for nitrogen dioxide. We are committed to improving the UK's air quality, reducing health impacts, and fulfilling our legal obligations. The 2015 national air quality plan for nitrogen dioxide



1. Home (<https://www.gov.uk/>)
2. Coronavirus (COVID-19) (<https://www.gov.uk/coronavirus-taxon>)

Speech

Transport Secretary's statement on coronavirus (COVID-19): 9 May 2020

Announcing a £2 billion package to support active travel to help the country emerge from coronavirus crisis.

Published 9 May 2020

From:

Department for Transport (<https://www.gov.uk/government/organisations/department-for-transport>)
and The Rt Hon Grant Shapps MP (<https://www.gov.uk/government/people/grant-shapps>)

Delivered on:

9 May 2020 (Transcript of the speech, exactly as it was delivered)



Transport Secretary's statement on coronavirus (COVID-19) 9 May 2020
(<https://www.youtube.com/watch?v=xkBktEphon4>)

Opening remarks

Good afternoon, and welcome to today's Downing Street press conference.

I'm pleased to be joined today by Professor Jonathan Van-Tam.

Latest data

Let me start by updating you on the latest information from the COBR data file.

I can report that through the government's monitoring and testing programme, as of today.....

- 1, 728,443 tests for coronavirus have now been carried out in the UK, including 96, 878 tests yesterday
- 215,260 people have tested positive, that's an increase of 3,896 cases since yesterday
- 11,809 people are currently in hospital with coronavirus in the UK, down from 12,284 yesterday

And tragically, of those hospitalised with the virus, 31,587 have now died. That's an increase of 346 fatalities since yesterday.

These deaths are devastating for the families and friends of victims, who are in our thoughts and prayers are with all of them every day.

But they also strengthen our resolve to fight this pandemic with all the resources we can muster in the weeks ahead....

Planning for restart/opportunity for lasting change

Tomorrow, the Prime Minister will set out a roadmap for the next phase in our strategy to tackle coronavirus.

In support of this, I am setting out today an ambitious programme to help prepare our transport network for the critical role it will play as we emerge from this crisis.

Importantly, it is true to say that moving beyond COVID will be a gradual process... not a single-leap to freedom.

When we do emerge, the world will seem quite different, at least for a while.

The need to maintain social distancing means that our public transport system cannot go back to where it left off.

Here is a very stark fact...

Even with public transport reverting to full service - once you take into account the 2 metre social distancing rule – there would only be effective capacity for one in ten passengers on many parts of the network.

Just a tenth of the old capacity.

So, getting Britain moving again, while not overcrowding our transport network, is going to require

many of us to think carefully about how and when we travel.

Everyone involved

We have accomplished so much over the past 7 weeks of lockdown.

The whole country has been responsible for reducing the COVID reproduction or 'R' rate...

Millions of households across the UK have changed their behaviour for the greater good.

Getting Britain moving again, whilst not overcrowding our transport network, represents another enormous logistical challenge.

Yet this is a problem which presents a health opportunity too.... an opportunity to make lasting changes that could not only make us fitter, but also better-off – both mentally and physically – in the long run.

Active travel

During the crisis, millions of people have discovered the benefits of active travel.

By cycling or walking, we've been able to enjoy this remarkably warm spring whilst sticking to the guidelines.

In some places, there's been a 70% rise in the number of people on bikes whether it's for exercise, or necessary journeys, such as stocking up on food.

So, while it's still crucial that we stay at home, when the country does get back to work, we need those people to carry on cycling and walking, and to be joined by many more.

Otherwise, with public transport capacity severely restricted, more cars could be drawn to the road and our towns and cities could become gridlocked.

We also know that in this new world, pedestrians will need more space.

So today (9 May 2020) I am announcing a £2 billion package to put cycling and walking at the heart of our transport policy (<https://www.gov.uk/government/news/2-billion-package-to-create-new-era-for-cycling-and-walking>).

To set out how we will deliver this, I will bring forward a national cycling plan for publication in early June, in line with the statutory Cycling and Walking Investment Strategy to help double cycling and increase walking by 2025.

The first stage, worth £250 million, is a series of swift, emergency interventions to make cycling and walking safer.

Pop-up bike lanes. Wider pavements. Cycle and bus-only streets. All examples of what people will start to see more of.

Accompanying the new money, we are today publishing fast-tracked statutory guidance, effective immediately, requiring councils in England to cater for significantly-increased numbers of cyclists and pedestrians, and making it easier for them to create safer streets.

For employees who want to start cycling to their place of work, but who don't have a bike right now, the popular Cycle to Work Scheme (<https://www.gov.uk/government/publications/cycle-to-work-scheme-implementation-guidance>) already allows employees to save between 25% and 39% on the cost of a new bike or an electric bike.

There has been a huge increase in people using the scheme, and we will work with employers to increase uptake further.

And for those who may have an old bike in the shed, and want to get it back into a roadworthy condition, there will be a voucher scheme for bike repairs and maintenance.

Plans are also being developed to boost bike fixing facilities.

What's more, over the next few months, we will set out further measures to make a 'once in a generation' change to the way people travel in Britain.

These will include tough new standards for cycling infrastructure;

- a new national cycling champion to inspire us
- much closer links with the NHS, with GPs prescribing cycling to help us get fitter
- legal changes to protect vulnerable road users
- at least one "zero-emission city," with its centre restricted to bikes and electric vehicles
- and the creation of a long-term cycling programme and budget, just like we have for our roads

There's clear evidence, including from the Prime Minister's time as mayor of London, that making streets safe for walking and cycling is good for retailers, business and the economy.

Green travel / E-scooters / E-vehicles

And in making these changes, our national recovery can also become a green recovery.

One of the few positive benefits about the crisis is drastically better air quality and the health benefits that that brings.

More than 20,000 extra deaths a year in the UK are attributed to nitrogen dioxide emissions, which are highest in areas with most road traffic.

We want to try to preserve this as much as possible.

So today I'm also fast-tracking trials of e-scooters, bringing this programme, already underway, forward from next year, to next month....

And extending those trials from four local authorities to every region in the country that wants them....

... in a bid to get e-scooter rental schemes up-and-running in our cities as fast as possible....

Helping reduce car use on shorter journeys, and taking some pressure off buses, at this vital time.

These trials will help us assess their safety and benefits, together with their impact on public spaces.

The car industry has of course been very badly hit during this crisis, but April's new sales figures showed – for the first time – that the two biggest selling models were both electric vehicles.

So, to help keep this quiet, clean car revolution going, I can also announce today, £10 million of additional support for car-charging points on our streets.

The car will remain the mainstay for many families and, as well as backing electric infrastructure, we're going to accelerate the filling of pot-holes that plague so many road users.

Data

And just as new technology is changing the vehicles we use, so new digital technologies will help us make more informed transport choices in our battle against Covid.

At a time when transport demand could quickly overwhelm capacity if users have no access to real-time travel information...

... It is crucial that we take advantage of the UK's digital tech expertise.

With the right mobile apps, people can find out which parts of the transport network are overcrowded. And avoid them!

They can choose alternative travel options, to help maintain safe social distancing...

... or they can get information to help stagger their journeys - and lift the burden on public transport at peak times.

This week I chaired a roundtable with key players like Google, Microsoft, and British firm, Citymapper, to develop both data and apps to help the public view crowding across the transport network, in real-time.

Overall package

This £2 billion announcement represents the most significant package of cycling, walking and green travel by any British government.

Clearly, it will never be possible to cycle, walk or e-scooter everywhere. Cars will remain an absolutely vital form of transport for many....

And so in the coming days...

as we look to the future...

... there will be further announcements about the huge investment we're making in road and rail networks – taking advantage of their low usership during this COVID crisis.

Closing remarks

Finally, as we begin the process of preparing public transport to get Britain moving again, no-one should underestimate the sheer scale of the challenge ahead.

Even with every train, bus and tram fully restored to service – this will not be enough.

Social distancing measures mean that everyone who travels will need to contribute to meeting this capacity challenge.

Changing our behaviour is the single biggest thing that's beaten back this virus.

The welcome fall we've seen in deaths is not only the achievement of our doctors and nurses and careworkers - but of everyone in the country for following the stay at home guidance.

To re-iterate, nothing I have said today changes these basic rules.

But as we contemplate the future, we will have to carry on making changes, particularly after we leave our homes.

Preventing overcrowding – which could lead to a second spike and more deaths – will be the responsibility of each and every one of us.

So please, only travel when you need to.

Be considerate to others, and help us prioritise essential workers.

And let's all play our part in Britain moving safely again when that time comes.

Published 9 May 2020

Related content

- Transport Secretary's statement on coronavirus (COVID-19): 23 May 2020
(<https://www.gov.uk/government/speeches/transport-secretarys-statement-on-coronavirus-covid-19-23-may-2020>)
- Transport Secretary's statement on coronavirus (COVID-19): 14 May 2020
(<https://www.gov.uk/government/speeches/transport-secretarys-statement-on-coronavirus-covid-19-14-may-2020>)
- Encouraging bicycle use for local journeys (<https://www.gov.uk/government/case-studies/encouraging-bicycle-use-for-local-journeys>)
- Reallocating road space in response to COVID-19: statutory guidance for local authorities
(<https://www.gov.uk/government/publications/reallocating-road-space-in-response-to-covid-19-statutory-guidance-for-local-authorities>)
- Environment Secretary's statement on coronavirus (COVID-19): 8 May 2020
(<https://www.gov.uk/government/speeches/environment-secretarys-statement-on-coronavirus-covid-19-8-may-2020>)

Collection

- Slides, datasets and transcripts to accompany coronavirus press conferences (<https://www.gov.uk/government/collections/slides-and-datasets-to-accompany-coronavirus-press-conferences>)

Explore the topic

- Cycling and walking (<https://www.gov.uk/transport/cycling-and-walking>)
- Low emission and electric vehicles (<https://www.gov.uk/transport/low-emission-and-electric-vehicles>)
- Coronavirus (COVID-19) (<https://www.gov.uk/coronavirus-taxon>)



1. Home (<https://www.gov.uk/>)
2. Transport (<https://www.gov.uk/transport>)
3. Driving and road transport (<https://www.gov.uk/transport/driving-and-road-transport>)
4. Cycling and walking (<https://www.gov.uk/transport/cycling-and-walking>)

News story

Review of Highway Code set to empower cyclists and pedestrians

Government to review how road users should behave in relation to cyclists and pedestrians.

Published 18 October 2018

From:

Department for Transport (<https://www.gov.uk/government/organisations/department-for-transport>)
and The Rt Hon Jesse Norman MP (<https://www.gov.uk/government/people/jesse-norman>)



- review is part of government drive to keep cyclists safe on the roads
- updated national standard for cycling training published to improve safety awareness of all road users
- cycling and walking minister Jesse Norman announces new measures for a healthier population

A new and improved Highway Code will help keep cyclists and pedestrians safe on the roads, Transport Minister Jesse Norman announced today (18 October 2018).

The government is set to review guidance on how road users should behave in relation to cyclists and pedestrians, as part of its ambition to drive down unnecessary deaths.

The new Highway Code will highlight how to avoid the dangers of close passing, and encourage people to adopt the 'Dutch reach', a method of opening a car door with the hand furthest from the handle, to force drivers to look over their shoulder for passing traffic.

Cycling and Walking Minister, Jesse Norman said:

Britain has some of the safest roads in the world, but we need them to be safer still for all – and particularly for cyclists, pedestrians and other vulnerable road users.

Cycling and walking are increasingly being understood as crucial parts of an integrated approach to issues of health, obesity, air quality and town and city planning.

But this will only happen if people feel safe on the roads.

These measures are part of a steady process of improvement and reform designed to achieve just that.

The review follows the recent publication of road casualty figures showing that 101 cyclists died in 2017 in road traffic collisions.

The government launched a new UK-wide initiative in June, to help the police crackdown on close passing, which leads to accidents and puts people off cycling.

West Midlands Police are offering drivers a road-side educational input on safe overtaking but repeat offenders - or anyone deemed to have driven dangerously close to a cyclist - can expect to be prosecuted and taken to court.

Joe Irvin, Chief Executive of Living Streets, said:

This is a major victory. When we walk our streets, we should not have to feel endangered by traffic. People walking and cycling do not cause road danger, congestion or toxic air levels, and yet they're the ones who too often pay the price on our roads. Last year, there was a 5% rise in pedestrian fatalities - this cannot continue.

A revision to update the Highway Code is needed to make people walking and cycling feel safer, and to encourage more people to choose these cleaner and healthier ways to travel.

Duncan Dollimore, Head of Campaigns at Cycling UK said:

Close overtakes and people opening car doors in front of cyclists are not only dangerous, they also put people off riding a bike. That's why Cycling UK has been campaigning for changes to the Highway Code rules for many years, to make the requirements to give enough space when overtaking a cyclist, wait if you can't, and look before you open your car door crystal clear.

We're delighted the government has listened and we hope to contribute to the discussions regarding the amendments required to prioritise the safety of cyclists and other vulnerable road users.

The Department for Transport is also publishing an updated national standard for cycling training manual (<https://www.gov.uk/government/publications/national-standard-for-cycle-training>), now with the latest best practice on safe cycling.

In addition, a summary of responses from the 'Cycling and walking investment strategy safety review consultation' (<https://www.gov.uk/government/consultations/cycling-and-walking-investment-strategy-cwis-safety-review>), launched to drive up standards of road safety, will be published. This is an important step in our drive to improve cycling and pedestrian safety.

Today Highways England is announcing a £3 million contract with Sustrans to help deliver a national programme of improvements to the National Cycle Network.

In August the department launched a consultation to look into whether a new offence equivalent to causing death by careless or dangerous driving should be introduced for dangerous cyclists (<https://www.gov.uk/government/consultations/new-cycling-offences-causing-death-or-serious-injury-when-cycling>). This consultation will close on 5 November 2018.

Following the last mile call for evidence (<https://www.gov.uk/government/consultations/the-last-mile-a-call-for-evidence>), the government launched a £2 million fund, which will contribute 20% of the purchase price of new e-cargo bikes, up to the first £5,000 of any purchase price - this will help to cut congestion and improve air quality, encouraging companies to replace older, polluting vans with a zero emission alternative to create a cleaner, greener future.

News desk enquiries

Media enquiries 020 7944 3021

Out of hours media enquiries 020 7944 4292

Switchboard 0300 330 3000

Published 18 October 2018

Related content

- Cycle safety review (<https://www.gov.uk/government/publications/cycle-safety-review>)
- Government's response to the Cycling & Walking Investment Strategy: safety review (<https://www.gov.uk/government/speeches/governments-response-to-the-cycling-walking-investment-strategy-safety-review>)
- Pedal cycles: lighting (<https://www.gov.uk/government/publications/pedal-cycles-lighting>)

Explore the topic

- Cycling and walking (<https://www.gov.uk/transport/cycling-and-walking>)



Department
for Transport

Government Response to Call for Evidence Cycling and Walking Investment Strategy: Safety Review



November 2018

- 4.10 Protection of cyclists and pedestrians includes physical protection, through segregation of different vehicle types; time restrictions applied to more dangerous vehicles; restricting vehicle access, for example, around schools; or shifting last mile deliveries from large vehicles to smaller and less dangerous pedal powered ones. However, protection can also involve legal measures, for example, improving the rules of the road and their enforcement, or through the design of vehicles with greater use of sensors to alert drivers of other vulnerable road users.
- 4.11 Several of the interventions proposed in our Action Plan seek greater protection for people cycling and walking, either physically or through the legal system. These include: supporting the Construction and Logistics for Community Safety (CLOCS) scheme and working to expand the scheme beyond London; completing an internal review of pavement parking laws (taking into account the concerns of the high street and other businesses and those of disability groups and others with a related interest); and exploring the use of new or existing courses to provide education on cycling and vulnerable road users as part of the sentencing framework for driving and cycling offences.

Safer passing of cyclists and horse riders, from behind and in front

- 4.12 A consistent theme in the Call for Evidence responses was the fear that cyclists experience on an unsegregated route when being overtaken or passed too closely by a motor vehicle. The dangers of close passing and the excellent work done on warning drivers, notably by the West Midlands police, were raised. Similar issues were raised by horse riders, who also called for motorists to give them sufficient space and consideration when passing.
- 4.13 The central importance of high quality, well designed and maintained, fully segregated cycling and walking infrastructure was raised by many respondents, and by some specifically as a way to respond to the problem of dangerous overtaking. Where infrastructure is on the road, such as cycle lanes, keeping it free from obstruction minimises the need for cyclists to swerve into the main carriageway.
- 4.14 Several of the activities proposed in the Action Plan seek to reduce the incidence of close passing, through education, design and support for enforcement. These include: producing educational materials and support for police forces so more drivers are made aware of the need to leave safe distances when overtaking cyclists; reviewing advice in The Highway Code on overtaking vulnerable road users to ensure it is clear and well understood; a pilot of cycle training for driving instructors, including safer overtaking as part of this training; refreshing DVSA official learning materials for all road users and instructors to place greater emphasis on cycle safety; and allowing local councils to use cameras to enforce parking restrictions in mandatory cycle lanes.

6. Law and rules of the road

A) Highway Code

Existing work

- 6.1 The Highway Code⁹³ contains advice to all road users and is made under the Road Traffic Act 1988.⁹⁴ Failure to follow the Code is not in itself an offence but it reminds road users of the law's requirements and it may be used in court when considering evidence in relation to driving or riding behaviour. The Highway Code is a collection of rules of two types:
- MUST/MUST NOT rules relate to legislation; and
 - SHOULD/SHOULD NOT OR DO/DO NOT rules are advisory but may still be used in legal proceedings
- 6.2 Drivers of motor vehicles are currently required to demonstrate an understanding of The Highway Code through the theory test, which must be taken and passed before drivers or motorcyclists can take a practical test.

Over the next two years

- 6.3 A revision of The Highway Code was one of the five priorities raised by major stakeholders in the Call for Evidence, specifically relating to junctions. The Highway Code has historically undergone a major revision approximately every ten years, with the last major revision occurring in 2007. A full-scale revision of the full Highway Code is a very substantial piece of work, and given the pace of present technology change, best undertaken in light of work now under way, especially relating to the Future of Mobility. To make progress in the interim, we announced in October 2018 a review of the guidance in The Highway Code to improve safety for cyclists and pedestrians.
- 6.4 A large number of respondents to our Call for Evidence told us that simple changes to The Highway Code could help tackle some of the most persistent acts of bad driving, thereby creating safer roads and encouraging more Active Travel. For example, in 2017 there were 35 pedestrian casualties and 134 cyclist casualties where 'vehicle door opened or closed negligently' was a contributory factor,⁹⁵ and respondents called for The Highway Code to provide advice in relation to safer ways to open and close car doors.
- 6.5 We will therefore be conducting a review of The Highway Code focused on improving safety for cyclists and pedestrians. This may look, for example, at overtaking, passing distances, ways to emphasise cyclist and pedestrian priority at priority-junctions,

⁹³ <https://www.gov.uk/guidance/the-highway-code> (viewed on 24 October 2018)

⁹⁴ <https://www.legislation.gov.uk/ukpga/1988/52/section/38> (viewed on 24 October 2018)

⁹⁵ Department for Transport. [Stats19 road casualties data for Great Britain](#) (viewed on 24 October 2018)

opening vehicle doors (the so-called “Dutch Reach”), the hierarchy of road users, you and your bicycle, rules for pedestrians (rules 1 to 35), rules for cyclists (rules 59 to 82), and road users requiring extra care (rules 204 to 225). A review focusing only on cycling and walking elements could still take up to three years depending on how much research and consultation is required.⁹⁶

B) Safety around schools

Existing work

6.6 The Government is committed to making our roads safer for vulnerable road users, including children. We want children to feel safe when they walk and cycle to and from school. Yet, at the moment, traffic danger is the top reason why adults accompany their child to school.⁹⁷ During 2018/19 the Government will be investing an additional £620,000 of funding in the Walk to School project,⁹⁸ a highly successful programme delivered by Living Streets, which aims to increase the number of children walking to school. The funding will support the delivery of the Government’s target to increase the percentage of children aged 5 to 10 years old that usually walk to school to 55 per cent by 2025. This builds on the £1 million funding for the Walk to School project in 2017/18, which targeted schools (including free schools, academies and independent schools) that were not covered by the Access Fund ‘Walk To’ consortium, to ensure maximum geographic reach.

Case study - Walk to School⁹⁹

The Government has invested almost £3 million into the Walk to School programme since 2015. This is a highly successful programme delivered by the independent charity Living Streets, which aims to increase the number of children walking to school. This supports the delivery of the Government’s CWIS target to increase the percentage of children aged 5 to 10 years old that usually walk to school to 55 per cent in 2025. School Route Audits are a key element of the support received by participating schools. This involves recording and mapping concerns about accessibility, safety or the condition of routes to school and putting forward a set of recommended actions.

Over 2017-18, 205 primary schools were involved in the programme with 14,254 more pupils and their parents walking to school. Walking to school rates increased across all schools by 30 per cent, rising from 59.5 per cent at baseline to 77.2 per cent at follow up.



⁹⁶ The procedures for revision of The Highway Code are laid out in [section 38 of the Road Traffic Act 1988](#) (viewed on 24 October 2018)
⁹⁷ [National Travel Survey 2017](#) (viewed on 24 October 2018)

⁹⁸ <https://www.gov.uk/government/news/new-measures-announced-to-halve-childhood-obesity-by-2030> (viewed on 24 October 2018)

⁹⁹ <https://www.livingstreets.org.uk/what-we-do/walk-to-school> (viewed on 24 October 2018); image courtesy of Living Streets

training resources and practical cycle training so that we can identify the best way of helping instructors to reinforce the right attitude and approach to learner drivers during lessons and throughout the learning to drive process. Safer overtaking will form an important part of this training for driving instructors.

- 7.13 As part of our review of the cycling and walking elements in The Highway Code, set out in Chapter 6 of this document, we will be ensuring that the advice on overtaking vulnerable road users and minimum passing distances is clear and well understood. This will help counter the dangerous practice of close passing which deters people from cycling.
- 7.14 It is also worth recognising here that, although out of scope of this particular review, roadside workers can similarly feel exposed to the risks of close passing, which again highlights the importance of drivers needing to pay due care and attention when passing vulnerable road users.

C) Professional drivers and riders

Existing work

- 7.15 HGVs are disproportionately represented in collisions resulting in pedestrian and cyclist fatalities, with 15 per cent of pedestrian collision fatalities and 14 per cent of cyclist collision fatalities in 2017 involving an HGV.¹¹⁶ The Department for Transport is actively involved in working with freight operators and road haulage groups to encourage the safety and protection of vulnerable road users that are likely to have an interaction with HGVs. The construction and logistics sector are working to reduce injuries and deaths of vulnerable road users, including cyclists, through their voluntary Construction and Logistics for Community Safety (CLOCS) scheme.¹¹⁷ This scheme was started in London with the support and involvement of Transport for London and is now being introduced in other UK cities.
- 7.16 With regard to people who cycle as part of their job, we have engaged with the Institute for Couriers and are doing more collaborative work on further training requirements in the sector, and minimising schedules that are so demanding that they might encourage excessive speed or dangerous road behaviour.
- 7.17 We continue to engage very closely with colleagues from other agencies, such as Transport for London, Highways England and a wide range of road safety stakeholders, who are keen for the profile of cycling and walking safety to be raised even higher. We are also updating the Government Buying Standards for transport to include the requirement for all new vehicles purchased by the Government fleet to meet minimum European New Car Assessment Programme (EuroNCAP) standards. This will include a minimum score for pedestrian protection.¹¹⁸

¹¹⁶ Department for Transport. [Stats19 road casualties data for Great Britain](#) (viewed on 24 October 2018)

¹¹⁷ <https://www.clocs.org.uk/> (viewed on 24 October 2018)

¹¹⁸ <https://www.gov.uk/government/publications/sustainable-procurement-the-gbs-for-transport-vehicles/government-buying-standards-for-transport-2017> (viewed on 24 October 2018)



1. Home (<https://www.gov.uk/>)
2. Regional and local government (<https://www.gov.uk/regional-and-local-government>)
3. Local government (<https://www.gov.uk/regional-and-local-government/local-government>)

Press release

Government shifts cycling up a gear

A nationwide drive to promote cycling in cities and national parks across England will be launched today.

Published 12 August 2013

From:

Department for Transport (<https://www.gov.uk/government/organisations/department-for-transport>), Prime Minister's Office, 10 Downing Street (<https://www.gov.uk/government/organisations/prime-ministers-office-10-downing-street>), The Rt Hon David Cameron (<https://www.gov.uk/government/people/david-cameron>), and The Rt Hon Sir Patrick McLoughlin (<https://www.gov.uk/government/people/patrick-mcloughlin>)

This was published under the 2010 to 2015 Conservative and Liberal Democrat coalition government



Photo: Nick Ansell/PA Images.

The Prime Minister announces the biggest ever single injection of cash for the country alongside plans to make roads safer for those on two wheels.

£77 million will be divided between Manchester, Leeds, Birmingham, Newcastle, Bristol, Cambridge, Oxford and Norwich, while the New Forest, Peak District, South Downs and Dartmoor will each share a slice of £17 million funding for national parks. With local contributions, the total new funding for cycling is £148 million between now and 2015.

The announcement includes a commitment from the government to cut red tape that can stifle cycle-friendly road design and to encourage changes to the way roads are built or altered. Councils will be expected to up their game to deliver infrastructure that takes cycling into account from the design stage.

Prime Minister David Cameron said:

Following our success in the Olympics, the Paralympics and the Tour de France, British cycling is riding high - now we want to see cycling soar. Our athletes have shown they are among the best in the world and we want to build on that, taking our cycling success beyond the arena and onto the roads, starting a cycling revolution which will remove the barriers for a new generation of cyclists.

This government wants to make it easier and safer for people who already cycle as well as encouraging far more people to take it up and business, local government, developers, road users and the transport sector all have a role to play in helping to achieve this.

Sign up for regular email updates (http://engage.number10.gov.uk/newsletter-sign-up/?utm_source=news&utm_medium=footer&utm_campaign=emailsignup) from the Prime Minister's Office.

Investment in 'cycle proofing'

New trunk road schemes that have a significant impact on cyclists, such as junction improvements or road-widening, will be 'cycle-proofed' so they can be navigated confidently by the average cyclist.

Significant junction upgrades and other improvements will help cyclists at 14 locations on the trunk road network where major roads can prove an obstacle for journeys by bike. £5 million will be invested in upgrades this year and a further £15 million will be invested in 2015 to 2016, with plans in place for many more similar schemes.

This commitment to improved cycling facilities is intended to put Britain on a level-footing with countries known for higher levels of cycling like Germany, Denmark and the Netherlands.

Transport Secretary Patrick McLoughlin said:

We have seen a significant growth in the number of cyclists in London over the last few years. But cycling shouldn't be confined to the capital. Today's announcement shows we are absolutely committed to boosting cycling in cities and the countryside across the whole of England. I want to help open up cycling to more people and these measures to make cycling safer on our roads are an important part of that.

Making cycling safer in urban areas

The Prime Minister announced allocations from the government's fund to make cycling easier and safer for people in the following urban areas which include the three largest cities outside of London:

- Greater Manchester £20 million
- West Yorkshire £18.1 million
- Birmingham £17 million
- West of England £7.8 million
- Newcastle £5.7 million
- Cambridge £4.1 million
- Norwich £3.7 million
- Oxford £0.8 million

This funding means that investment in cycling in the 8 cities is now in excess of £10 per head per year, as recommended by the All Party Parliamentary Cycling Group's recent report. This will help these cities deliver a surge in cycling similar to that seen in the capital.

National parks and increasing cycling participation

In addition the Prime Minister announced:

- funding has been agreed at 4 national parks - the Peak District (£5.0 million) Dartmoor (£4.4 million), the South Downs (£3.8 million) and the New Forest (£3.6 million)
- a feasibility study to look into creating a new national cycleway broadly following the route of the HS2 rail line from London to Birmingham, Leeds and Manchester, linking communities and rail stations to work, schools and shops as well as countryside and tourist attractions along the way
- the creation of a new national School Awards Scheme to recognise schools that have demonstrated excellence in supporting cycling and walking; the UK cycle industry, led by the Bicycle Association, has volunteered to work with government to sponsor this award
- the government is extending its commitment to support Bikeability cycle training into 2015 to 2016

Helping local authorities help cyclists

The government has already made it easier for local authorities in England to help cyclists. Measures include removing bureaucracy to introduce 20 miles per hour (mph) speed restrictions, which make streets safer for all road users.

All of the cities receiving funding today have either already implemented, or are looking to expand, the network of 20 mph zones through the cycle ambition funding, with Norfolk and Cambridge looking to introduce extensive area-wide 20 mph schemes. Similar work has been done to make it easier to introduce 40 mph limits in rural areas.

Improving junctions, signals and cycle lanes

The government has also made it easier to introduce 'Trixi' mirrors at junctions so that HGV drivers can see cyclists more easily and contraflow measures so that cyclists can use one-way streets to avoid the busiest roads and junctions.

Additionally, the government is currently working with highway authorities to trial a raft of measures to improve roads for cyclists.

These include mini-signals at cyclists' eye height to give more targeted information to cyclists and the possibility of a head start at junctions along with filter signals for cyclists as an alternative way of providing a head start at traffic lights. There are also trials of different roundabout designs to reduce the speed of vehicles to provide a safer route for cyclists and options for larger advanced stop lines, to accommodate the growth in cycling and make it safer for cyclists at junctions.

Further work is underway to make it even easier for councils to install mandatory cycle lanes and contraflow cycle lanes, cutting costs and complexity for councils. The government is also looking to remove the requirement for a lead-in lane for cyclists at advanced stop lines, making it easier for highway authorities to install advanced stop lines at junctions.

The Department for Transport is also arranging a conference in the autumn aiming to encourage local authorities to deliver better cycle infrastructure.

Details of funding and winning bids

Greater Manchester

DfT funding £20 million

Local contribution £11.1 million

The funding will kick start Velocity 2025, which will, over time, create a city-wide cycle network. Initially, as part of the CCAG funding (<https://www.gov.uk/government/publications/cycle-city-ambition-grants>), this will involve a series of high quality cycle lanes that will lead from the city centre out to the M60 like spokes of a bicycle wheel. Spokes will have a Cycle and Ride station located several miles from the city centre, allowing cyclists to leave their bikes and swap onto Metrolink or a local rail service for the last leg of their journey if they wish. As part of a door-to-door approach the proposals involve the introduction of 20 mph zones in some residential areas adjacent to the cycle 'spokes' to enable safer access to the cycleways. Greater Manchester's vision is to double the number of cycle journeys within 5 years and to double them again by 2025. The government funding will bring 56 km of new or improved cycle paths and predicted health and wellbeing savings of around £7 million a year.

West Yorkshire

DfT funding £18.1 million

Local contribution £11.2 million

Building on Yorkshire's hosting the Tour de France's Grand Depart in 2014, a package of cycle infrastructure improvements is proposed. A new segregated Super Highway from east Leeds to Bradford City Centre will be delivered with new connections in Leeds City Centre to provide continuity to other radial routes. In addition new secure cycle parking facilities are included and the Leeds Liverpool Canal Tow Path will be upgraded. At 14 miles this will be the longest continuous cycleway in the north of England, connecting key employment and regeneration sites in both cities. The ambition in West Yorkshire is to triple current cycling levels and increase cycling to account for 12% of all journeys in the target areas.

Birmingham

DfT funding £17 million

Local contribution £7.3 million

Birmingham Cycle Revolution is a 20-year strategy to make cycling a mainstream form of transport across the city. It aims to have cycling accounting for 5% of all journeys within 10 years and 10% within 20 years. This fund will accelerate this ambition through the creation of the 1st phase of a city-wide strategic cycle route network along radial corridors initially extending 20 minutes cycling time from the city centre. Key features include 71 miles of new cycle routes, improvements to 59 miles of existing cycle routes, segregated cycle facilities, lower speed limits, off-road routes using canals and green spaces and secure cycle parking and supported by a programme of smarter choices measures.

West of England

DfT funding £7.8 million

Local contribution £3.3 million

Building on its previous successes, the West of England's ambition is to increase cycling by 76% by 2016. The bid focuses on linking people to major employment opportunities across the city of Bristol. Central to this is a new pedestrian and cycle promenade running east to west across the city following the route of the River Avon and terminating at Bristol Temple Meads station, where a new enterprise zone aims to bring 17,000 new jobs to the city. The scheme will create five new or improved river crossings for cyclist. In addition the bid includes the Cribbs Causeway to Emerson's Green trunk cycle route in the North Fringe of Bristol; and, the Seven Dials National Cycle Scheme in Bath City Centre.

Newcastle

DfT funding £5.7 million

Local contribution £6 million

Central to Newcastle's bid is linking employment and training opportunities to new housing developments in Newcastle and to existing communities where people are currently least likely to cycle. Newcastle plans a network of 7 major cycle routes across the city making the best use of existing infrastructure and linking in with the major improvements currently underway in the city centre. This government investment will be supported by an Active Travel Centre where people can

go for cycle maintenance, parking and information. Recognising the potential for cycling, almost a million of public health funding in Newcastle is being invested in this initiative. Newcastle's vision is to achieve 12% of all journeys under 5 miles by bike in the next 10 years.

Cambridge

DfT funding £4.1 million

Local Contribution £4.1 million

Cambridge competes on a global scale as somewhere to live, work and invest. Congestion in the city is seen as one of the major risks to its future success and cycling is seen as an intrinsic part of the solution.

In 10 years' time, Cambridge aims to have 40% of all journeys in the city by bike, bringing it in line with some of the best cycling cities in Europe.

The funding allocated today will create new, segregated cycle paths along some of Cambridge's most used cycle routes and will also provide much improved cycling facilities to some of the major employment sites in the South Cambridgeshire District.

Local match funding will provide parking for 3,000 bicycles at Cambridge station and a new direct foot/cycle route between the station and the Cambridge Science Park - a major employment centre for the city that has a new station planned to open in 2015.

Norwich

DfT funding £3.7 million

Local contribution £1.8 million

Norwich's ambition is to use cycling as the catalyst to make the city even more liveable and prosperous. Working with the public health funding partners, the city aims to double cycling in the next 10 years, from an already high base. It will generate economic growth by connecting communities to centres of employment. At heart of its proposals is an eight mile cross-city route linking population centres to the locations of 51,500 existing and 12,500 planned jobs. Norwich's targets are to increase the number of adults cycling once a week to 44% and adults cycling to work to 15% by 2023.

Oxford

DfT funding £835,000

Local contribution £580,000

The scheme will remove one of the main barriers to cycling into and out of Oxford city centre, making The Plain roundabout safer and more attractive for both cyclists and pedestrians. The Plain roundabout is a busy 5-arm roundabout with a high level of bus traffic and a history of cyclist

casualties. The scheme will reduce the width of the circulatory carriageway and improve the roundabout's design to unlock access to the city for cyclists of all levels of experience. This scheme will supplement a wider package of measures both planned and existing to help the city's cyclists.

Peak District

DfT funding £5 million

Local contribution £2.5 million

3.5 million people in the surrounding urban areas of Greater Manchester, Sheffield, Derby, Nottingham and Stoke-on-Trent will have better access to the cycle ways of the Peak District. The scheme provides 4 new routes which will enhance the network of traffic free cycling in the Peak District. The programme aims to target public health in the cities that connect to the national park.

Dartmoor

DfT funding 4.4 million

Local contribution £3.0 million

The funding will deliver major improvements to 93 miles of cycle ways, with a further 86 miles benefitting from smaller upgrades such as improved signage. The focus of the scheme is new family-friendly routes to and through the park, supported by cycling hubs and provisions for access by those with limited mobility.

South Downs

DfT funding £3.8 million

Local contribution £1.3 million

The scheme provides opportunities for leisure cycling for the 5 million people who live within an hour of the South Downs National Park. The scheme will focus on improving access to the National Park from major rail stations. 55km of new routes will be built across England's most visited and densely populated National Park.

New Forest

DfT funding £3.6 million

Local contribution £2.2 million

The scheme focuses on a new network of cycle docking stations that will allow people to cycle between key attractions, communities and transport hubs, supported by a new family cycling centre adjacent to Brockenhurst station. The scheme will also work with tourism businesses to ensure high quality family cycling facilities are widely available.

HS2

The feasibility study into a cycle path broadly following the HS2 route will look into how existing footpaths or cycle tracks could be joined up or upgraded to create a single route between London, Birmingham, Leeds and Manchester. This could give benefits to people living along the HS2 route as well as encouraging tourism.

The study and its conclusions would be separate from ongoing work on HS2. This will give plans for cycle paths the flexibility to work to their own timetable. It will not be part of the HS2 Bill processes with no land-take or cost impacts.

More details on the work of this study and its timescales will be announced in due course.

Current cycling levels

Currently, only 2% of trips in the UK are made by bike, compared with 14% in Germany and almost a third in the Netherlands.

This is despite the fact that 43% of people own or have access to a bike in Britain and 38% of people could just as easily cycle for short trips than use a car.

There are huge variations in levels of cycling across our towns and cities. 47% of adults in Cambridge cycle at least once a week, compared with fewer than 5% in other areas.

According to statistics published by Sport England, the number of people cycling for sport and leisure has increased by 231,300 since 2005 to 2006, when London won the bid to host the Olympic Games.

Briefing on the government's ambition for cycling

The briefing document on the government's ambition for cycling (<https://www.gov.uk/government/publications/cycling-governments-ambition-and-funding>) provides more detail and summarises new funding and policy commitments that will support the increase in cycling.

Published 12 August 2013

Related content

- Cycling: government's ambition and funding (<https://www.gov.uk/government/publications/cycling-governments-ambition-and-funding>)
- Government response to the All Party Parliamentary Cycling Group (<https://www.gov.uk/government/publications/government-response-to-the-all-party-parliamentary-cycling-group>)

Explore the topic

- UK economy (<https://www.gov.uk/business-and-industry/uk-economy>)
- Local government (<https://www.gov.uk/regional-and-local-government/local-government>)



Department
for Transport

Briefing on the Government's ambition for cycling

12th August 2013

August 2013

3. Cycle Proofing Roads

What is cycle proofing?

3.1 Since the early 1980s, the number of cyclists killed or seriously injured has fallen by half. However, whilst various studies suggest the health benefits of cycling significantly outweigh the safety risks⁸, 48% of existing cyclists and 65% of non-cyclists think that it is too dangerous to cycle on roads.⁹ If we are to bring about a step-change in levels of cycling, we must – and we will - cycle proof our roads.

3.2 In practice, cycle proofing means taking action on a variety of fronts:

- Encouraging local authorities to design road improvements with cyclists as well as motorists in mind and to use traffic management tools and techniques to manage the needs of all road users;
- Making greater provision for cycling on the strategic road network by correcting historic problems, retrofitting the latest solutions and ensuring that it is easy and safe for cyclists to use junctions;
- Ensuring cyclists have access to adequate training to enable them to safely and confidently cycle on the road; and
- Encouraging a culture of sharing the road amongst all users. In 2012, we launched a new THINK CYCLIST campaign, encouraging drivers and cyclists to 'Look out for each other' and we plan to run a similar campaign in the coming months. THINK! communicates cycle safety messages to drivers and cyclists, recognising that these are often the same people.¹⁰

Local roads

3.3 Designing roads with cyclists in mind, and effectively managing the interactions between cyclists and other traffic, is critical to improving safety and widening the appeal of cycling. An important aspect of our approach is to invest in new and enhanced infrastructure that is cycle-friendly – as we are doing through the Cycle City Ambition grants, the Local Sustainable Transport Fund, the Community Linking Places Fund and the Cycle Safety Fund.

⁸ For example, *Do the health benefits of cycling outweigh the risks?* (de Hartog, Boogaard, Nijland and Hoek, Environmental Health Perspectives August 2010)

⁹ British Social Attitudes Survey 2012

¹⁰ 80% of cyclists hold a driving licence and 1 in 5 drivers cycle at least once a month (British Social Attitudes Survey 2011).

- 3.4** However, funding is not the only way to support local authorities in cycle proofing their roads. We already produce guidance on a wide range of cycle facilities¹¹, including measures such as fully segregated lanes which are highlighted as good practice in other countries. Transport for London and the Welsh Assembly Government are currently developing their own cycling design standards and, where appropriate, we will endorse these.
- 3.5** Ensuring that all authorities make best use of the tools currently available to them is an important objective. So we will establish a new group under the remit of the Department for Transport's Cycling Forum to:
- Help local authorities share good practice, knowledge and experience on the engineering and traffic management solutions already available to address common challenges to making roads more cycle-friendly;
 - Investigate opportunities for collaboration in the preparation and testing of new engineering and traffic management solutions; and
 - Help local authorities identify how best to involve cyclists themselves in identifying the right solutions to local challenges.
- 3.6** We are also extending the range of tools available to local authorities. Following consultation with cycling stakeholders during the Traffic Signs Policy Review, we agreed to implement several changes to promote cycling and improve safety.¹² Some changes depend on new regulation which is planned for 2015 but a number of improvements have already been made. For example, we have given every local authority in England the authorisation to:
- Use 'no entry except cycles' signing which can facilitate contraflow cycling;
 - Use 'trixi' mirrors to help lorry drivers see cyclists in their blind spot at junctions; and
 - Implement 20mph speed restrictions with greater flexibility.
- 3.7** We will now also bring forward measures to reduce the burden on authorities seeking to develop cycle-friendly highway networks. At present, a Traffic Order (TO) is required to create mandatory cycle lanes, contraflow cycle routes and exemptions for cyclists (for example, on no entry and no through roads and where there are prohibited left or right turns for other traffic). We will remove the need for a TO to enable authorities to put these cycle-friendly measures in place more quickly and cost effectively.

¹¹ For example Local Transport Note 2/08 *Cycle Infrastructure Design* and Local Transport Note 1/12 *Shared Use Routes for Pedestrians and Cyclists* available at <https://www.gov.uk/government/publications/local-transport-notes>

¹² These are set out in *Signing The Way* which is available from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/4346/signing-the-way.pdf

- 3.8** Some local authorities would like to explore new design and traffic management options to help them deliver on their ambition to grow cycling. We will work constructively with authorities on such proposals - as we are already doing with Transport for London and other non-London authorities on issues such as low-level and filter signals and new roundabout designs.

The Strategic Road Network

- 3.9** As explained in *Action for Roads: a network for the 21st century*¹³, we are committed to ensuring the strategic road network (SRN) supports rather than hinders cycling. Our proposed reforms will help ensure the network performs to a high standard, thereby encouraging long-distance traffic - including lorries - to use the SRN rather than local roads.
- 3.10** We also need to invest in infrastructure in locations where the SRN severs communities and acts as a barrier to cycling and walking. We will make an immediate start on this, with the Highways Agency investing £4.8m over the next 2 years in delivering 14 projects that improve conditions for cyclists and pedestrians. Interventions will range from safer junctions to improved crossings and the provision of new segregated cycle facilities.
- 3.11** We will also invest a further £15m in 2015/16 in a more extensive programme of schemes to tackle severance and improve safety. We will bring together the Highways Agency, local authorities and cycling user groups to develop and prioritise interventions across the SRN, drawing upon lessons learned in the delivery of the initial 14 schemes.

Extending Bikeability

- 3.12** Bikeability teaches children how to cycle safely, confidently and competently on the road and plays a valuable role in creating a new generation of cyclists. Thanks to Government funding, by March 2013 over a million children had received Bikeability training and we estimate a further 600,000 will receive training by March 2015.
- 3.13** As surveys of participants and their parents show, Bikeability gets results. 86% of children that have taken part in the scheme feel safer and more confident on the road and 87% of parents feel more confident in allowing their children to cycle on the road.¹⁴ There are also indications

¹³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/212590/action-for-roads.pdf

¹⁴ <http://www.dft.gov.uk/bikeability/wp-content/uploads/perceptions-and-experiences-of-bikeability.pdf>

that Bikeability is positively associated with higher levels of cycling to school.¹⁵

- 3.14** It is essential that we continue to support Bikeability as part of our approach to delivering a step change in cycling levels. We will extend funding for Bikeability beyond the current Parliament into 2015/16, thereby enabling another quarter of a million children to receive cycle training. Further details will be set out in our delivery plan in the autumn.

¹⁵ http://www.dft.gov.uk/bikeability/wp-content/uploads/120320_Cycling_to_School_Bikeability_Data_Report_v_final.pdf



1. Home (<https://www.gov.uk/>)

Cycle Proofing Working Group

The Cycle Proofing Working Group advises the Department for Transport, public bodies, government departments and devolved agencies on cycle proofing policy.

Contents

- Terms of reference
- Meeting dates
- Membership
- Resources
- Contact details

Cycle proofing is a process which over time ensures that the built environment generally, and roads specifically, are seen to be safe, convenient and pleasant for cycle use by people of all ages and abilities.

Terms of reference

The aim of the Cycle Proofing Working Group is to improve the quality of UK roads for cycling by:

- sharing knowledge of cycle proofing with those designing and implementing cycle infrastructure on UK roads
- conducting research on innovative approaches to cycle proofing
- encouraging the training of engineers and planners in cycle proofing
- advising on cycle proofing standards
- advising on how to better integrate policies that impact cycle proofing, such as planning policy
- advising on the maintenance of roads to improve conditions for cycling

See full terms of reference below.

Cycle proofing working group terms of reference

(https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/413571/Cycle_proofing_group_terms_of_reference.pdf)

PDF, 411KB, 4 pages

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Meeting dates

The group meets 6 times per year, on the first Tuesday of every second month.

Membership

The group is made up of technical experts on the design and implementation of highway cycling infrastructure. Current members are:

- Department for Transport (Chair)
- Highways Agency
- Chartered Institution of Highways & Transportation
- Chartered Institute of Logistics and Transport
- Institution of Civil Engineers
- Institute of Highways Engineers
- Transport for London
- Local authority representatives
- British Cycling
- CTC, the national cycling charity
- Sustrans

Resources

Departmental

- Developing new cycling infrastructure: case studies (<https://www.gov.uk/government/collections/cycling#case-studies-developing-new-cycling-infrastructure>)
- Traffic signs regulations and general directions (<http://www.legislation.gov.uk/uksi/2002/3113/contents/made>)
- Traffic advisory leaflet 1/12: guidance on the traffic signs (amendment) (no. 2) regulations and general directions 2011 (<https://www.gov.uk/government/publications/the-traffic-signs-amendment-no-2-regulations-and-general-directions-2011>)
- Traffic signs: guidance note on the 2011 area-wide authorisations and special directions (<https://www.gov.uk/government/publications/the-traffic-signs-amendment-no-2-regulations-and-general-directions-2011>)
- Traffic signs manual (<https://www.gov.uk/government/publications/traffic-signs-manual>)
- Local transport note 2/08 cycle infrastructure design (<https://www.gov.uk/government/publications/cycle-infrastructure-design-ltn-208>)

- Local transport note 1/12 shared use routes for pedestrians and cyclists (<https://www.gov.uk/government/publications/shared-use>)
- Manual for streets (<https://www.gov.uk/government/publications/manual-for-streets>)
- Manual for Streets 2 (<https://www.gov.uk/government/publications/manual-for-streets-2>)

Other government, research and professional bodies

These webpages provide useful information for local authorities but do not represent government policy.

- Institute of Highway Engineers - cycling infrastructure planning and design course (<http://www.theihe.org/ihe-events/cycling-infrastructure>)
- Welsh Government active travel design guidance (PDF, 10.8MB) (<http://gov.wales/docs/det/publications/141209-active-travel-design-guidance-en.pdf>)
- Transport for London - London cycling design standards (<https://tfl.gov.uk/corporate/publications-and-reports/streets-toolkit>)
- Transport for London - international cycling infrastructure best practice study (<http://www.tfl.gov.uk/corporate/publications-and-reports/cycling>)
- Chartered Institution of Highways and Transportation - planning for cycling (<http://www.ciht.org.uk/en/knowledge/streets-and-transport-in-the-urban-environment/index.cfm>)
- Chartered Institute of Logistics and Transport - Cycle Hub (<http://www.ciltuk.org.uk/AboutUs/ProfessionalSectorsForums/Forums/Cycling/TheHub.aspx>)
- Institution of Civil Engineers - cycle infrastructure design guidance (<http://www.ice.org.uk/topics/transport/ICE-Transport-Policy/Cycling-and-Walking/Cycle-infrastructure-design-guidance>)
- Transport Research Laboratory - safer cycling innovations (<http://www.trl.co.uk/solutions/sustainability/cycling/safer-cycling-innovations>)

Contact details

CPWG@dft.gov.uk

UK Cycle Proofing Working Group

Terms of Reference

March 2015

Introduction

This document describes the:

1. Purpose of the Cycle Proofing Working Group
2. Definition of Cycle Proofing
3. Cycle Proofed Infrastructure
4. Cycle Proofing Project Plan
5. Membership
6. Meeting arrangements

1 Purpose of the Cycle Proofing Working Group

- 1.1. The Group advises the Department for Transport, public bodies, departments and devolved agencies, when requested, on cycle proofing policy and engages with the development of cycle proofing policy and activity in the UK more generally.
- 1.2. The aim of the Cycle Proofing Working Group is to improve the quality of UK roads for cycling by:
 - Sharing knowledge of cycle proofing with those designing roads for cycling
 - Conducting research on innovative approaches to cycle proofing
 - Encouraging the training of engineers and planners in cycle proofing
 - Advising on cycle proofing standards and guidance
 - Working to integrate policies that impact cycle proofing, including planning and development control
 - Advising on the maintenance of roads to improve conditions for cycling

2 Definition of Cycle Proofing

- 2.1 Cycle proofing is a process which over time ensures that the built environment generally, and roads specifically, are seen to be safe, convenient and pleasant for cycle use by people of all ages and abilities.
- 2.2 Cycling proofing involves:
 - (a) consideration of the extent and quality of existing cycling conditions on urban and rural networks of roads, streets, junctions and crossings; and
 - (b) identification of measures to improve cycling conditions in these areas;
 - (c) progressively creating comprehensive and coherent transport networks for cycle use.

3 Cycle Proofed Infrastructure

- 3.1 Cycle proofed roads, streets, paths and public spaces are attractive and comfortable for people of all ages and abilities to cycle on and feel they belong and are safe¹.
- 3.2 Cycle proofed transport infrastructure enables people to cycle easily, safely and conveniently. This includes the provision of secure cycle parking and information for planning onward journeys by cycle. New infrastructure will explore opportunities for integrating cycling, which could include creating cycle paths alongside new public transport infrastructure.
- 3.3 In both instances, cycle use should be considered from the beginning of an inclusive design process which aims to maximise benefits to all road users.
- 3.4 In accordance with the draft Cycling Delivery Plan, cycle proofed transport infrastructure is part of the longer term vision for cycle proofing policy. The current remit of the group, and cycle proofing policy, is improving the design of roads for cycling.

4 Cycle Proofing Project Plan

- 4.1 To achieve the aims set out in Part 1, the Group will develop and implement a Cycle Proofing Project Plan. The Plan will set out relevant projects and actions, including activity being undertaken by the organisations which members represent (see section 5 for a list of organisations), and identify synergies between them. It will implement actions where appropriate and review the effectiveness of existing or planned projects.
- 4.2 The Group communicates its work and other information relevant to cycle proofing via a webpage, face-to-face exchange and other appropriate forums.

¹ Other than places where cycling is prohibited.

5 Membership of the Cycle Proofing Working Group

5.1 The group has a core membership of:

- Department for Transport (Chair)
- Highways Agency
- Chartered Institution of Highways & Transportation (CIHT)
- Chartered Institute of Logistics and Transport (CILT)
- Institution of Civil Engineers (ICE)
- Institute of Highways Engineers (IHE)
- Transport for London (TfL)
- Representatives of Local Authority Representatives as appropriate
- Association of Directors of Environment, Economy, Planning and Transport (ADEPT)
- British Cycling
- CTC, the national cycling charity
- Sustrans

5.2 Others can be called in when relevant to the work of the Group, particularly:

- Other policy, design or engineering experts.
- Other professional bodies.
- Other specialists from Department for Transport.

5.3 Members are responsible for liaising with their peer groups in advance of the meeting to bring the widest possible breadth and perspective on the work of the group.

6 Meeting arrangements

6.1 Meetings are held on a bi-monthly basis or more frequently if required. Meetings act as a forum to explore cycle proofing and progress work on the project plan.

6.2 An agenda is circulated by the Chair one week in advance of the meeting and a list of actions is circulated within one week after the meeting.

6.3 Members will respect confidentiality.

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Cycling and Walking: Infrastructure:Written question - 130509

Q Asked by **Andrew Selous** (South West Bedfordshire) [N]

Asked on: 28 February 2018

Department for Transport

Commons **130509**

Cycling and Walking: Infrastructure

To ask the Secretary of State for Transport, when he plans to update national design guidance on cycling and walking infrastructure.

A Answered by: **Jesse Norman**

Answered on: 05 March 2018

The Department's guidance for local authorities on designing good, safe infrastructure for cyclists is set out in Local Transport Note 2/08. In line with the commitment made in the Government's Cycling and Walking Investment Strategy, the Department is in the process of updating this guidance to take account of developments in cycling infrastructure since its publication in 2008, and aims to publish a revised version by the end of 2018. Additionally, the Department is in the process of reviewing both the Inclusive Mobility and Tactile Paving guidance and has let a research contract to establish the scope of revisions needed. Research for this is anticipated to be completed later this year.



Llywodraeth Cymru
Welsh Government

Design Guidance

Active Travel (Wales) Act 2013

December 2014



Cyclists' Needs

4.8. Introduction

- 4.8.1 In the Active Travel Act, a cyclist is simply defined as someone who uses a cycle, and so in this document, 'cyclist' is used a shorthand for anyone who happens to use a cycle, whatever the distance, speed or purpose of the journey, or the characteristics of the person.
- 4.8.2 Designs should therefore meet the needs of everyone who cycles for any reason and at any age or physical condition; as well as those who are considering taking up cycling for the first time particularly children and young people. Cycle routes should cater for a wide spectrum of people with different levels of confidence and experience; including people riding cycles adapted to meet particular physical needs (see Section 4.2 above).

4.9. Why do people cycle?

- 4.9.1 The principal reasons given for cycling are that it is convenient and fast. In addition, many users are motivated by the health benefits they get from cycling (Cycling Embassy of Denmark, 2012). However, reasons can differ depending on age of user or trip types, or even time of day.
- 4.9.2 The most significant barrier to achieving more cycling is the perceived lack of safety, particularly for women and older people, who are under-represented amongst regular cyclists in the UK².
- 4.9.3 While main roads are often the most direct, coherent network available to cyclists, they are the places where fear of and intimidation by motor vehicles is at its greatest. Consequently, in many areas the provision of adequately safe, attractive and comfortable facilities along these roads is crucial to encouraging active travel. These routes can be supplemented by more indirect routes along minor roads or paths.

² Understanding Walking and Cycling – Lancaster University, 2011; Attitudes towards cycling, Annual Report 2012 – Transport for London

Cycling Safety

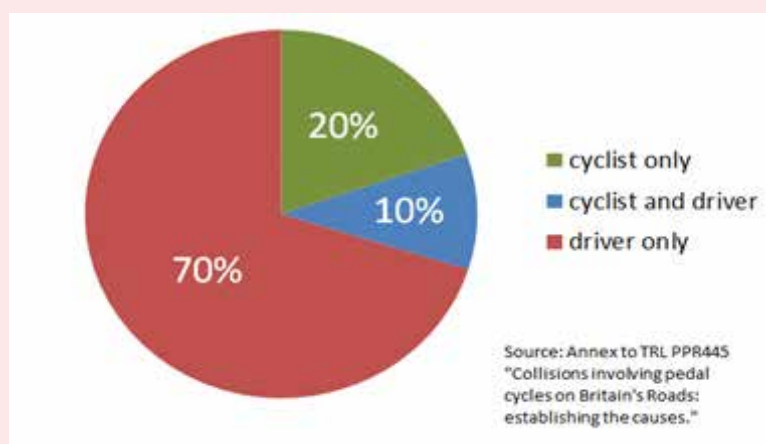
The health benefits of cycling greatly outweigh the risks of injury encountered while cycling, however, the risks of injury while cycling are typically higher than when travelling by car. Per mile travelled, the fatality risk of cycling is comparable to walking, with around 31 pedestrians killed per billion kms walked and 27 cyclists killed per billion kms cycled (DfT, 2013d).

There are approximately 80,000 cycle casualties per year in Great Britain of which proportionately around 1,250 occur in Wales (DfT, 2013c). Of these casualties just over a third are reported to the Police, nearly all of which involved another vehicle or pedestrian.

Most of the large number of non-reported collisions are cycle-only incidents, many of which involve ice, wet or oily surfaces, gravel, debris or mud. This shows that attention must be paid to maintaining smooth, textured surfaces that are swept and receive good winter maintenance.

Collisions involving motor vehicles tend to be serious, representing over 90% of fatalities. Most of these collisions are considered by Police to be the fault of the driver, (see graphic below).

Collisions involving cyclists aged >25 and drivers - contributory factors attributed by police (2005-07)



Over two thirds of collisions with vehicles occur at junctions (DfT 2013b). A quarter of all serious injuries or deaths to cyclists involve motor vehicles turning either left or right, with the remainder either involving overtaking, or where the vehicle is moving ahead (TRL, 2009). Heavy goods vehicles are disproportionately involved in cycle fatalities: 18% of deaths involve these vehicles, despite them making up just 5% of road traffic.

It is therefore vital to provide safe, coherent, direct and comfortable routes for cyclists through major junctions - otherwise even high quality links will be underused by cyclists who are unable to interact with fast moving traffic; particularly people who are nervous, inexperienced, elderly or who have disabilities.

4.10. The Effort Required to Cycle

- 4.10.1 The amount of effort required to cycle depends on physical conditions and the local environment: on surface quality, surface material, ability to maintain constant speed, gradients, deflections and undulations and prevailing winds.
- 4.10.2 The conservation of cyclist effort should be a key consideration in the design of any cycling facility. Designers can take positive steps to enable people to cycle with the minimum of effort:

Table 4.2 – Factors Affecting Cycling Effort

Factors affecting cycling effort required		Meaning	Design implications
The Cycle and Rider	Speed travelled	A cyclist's ability to maintain their own speed matters a great deal.	Routes that are direct and allow cyclists to maintain their speed are the most appealing to users – designers should avoid making cyclists stop, slow down, or deviate unnecessarily from their route.
	Efficiency of cycle		
	Mass of rider and cycle	All these factors, taken together, means that stopping and starting require a lot of effort; much more than maintaining a constant speed.	

Table 4.2 – Factors Affecting Cycling Effort

Factors affecting cycling effort required		Meaning	Design implications
		It also means that lighter cycles require less effort to ride and that it is a good idea to maintain a cycle in optimum working order.	The effective width available for cycling and the choice of junction type are important factors in allowing for maintenance of speed.
Surface quality	Resistance of the road surface	The greater the surface resistance, the harder it is to cycle. This is particularly true for small-wheeled cycles.	The quality and smoothness of the riding surface, and its continued maintenance, are essential for comfort and efficiency.
Gradient	Gradient	The steeper the gradient, the more energy is required to overcome it.	Directness of route may need to be balanced with avoiding steep gradients.
Air Resistance	Headwind Frontal area and drag coefficient	The frontal area of the cyclist matters: upright cyclists using 'city bikes' have to generate more power. Importantly, environmental conditions also matter. Cycling into a prevailing headwind, requires much more effort. Local conditions, such as microclimate around tall buildings, can exacerbate this.	Designing to reduce headwind effects has not been commonplace in Wales but can make a big difference. Windbreaks using planting, trees or fences, can help mitigate the effects of strong winds



Electrically Assisted Pedal Cycles

- 4.10.3 Electrically-assisted pedal cycles are in widespread use in continental Europe and are becoming increasingly popular in the UK. They provide power to drive the wheels in addition to the effort of the cyclist, up to a speed of 15mph, and make it much easier to tackle hills. They therefore have great potential for use in Wales. In design terms, they are little different to conventional cycles, and can use cycle lanes, tracks and parking spaces in the same way.

4.11. The Dimensions of Cycles and Cyclists

- 4.11.1 Typical conventional cycles for adults are around 1.8m in length and 0.65m in width. For an adult cyclist, 0.8m is the typical static width but extra width is needed for moving cyclists (see below). A reasonable assumption is that this amounts to a total width of 1m (as stated in LTN 2/08) – this is referred to as the ‘dynamic envelope’
- 4.11.2 People using non-standard types of cycles should not be excluded from using cycle infrastructure through lack of consideration for their needs at the design stage. There are many types of non-standard cycles, including:
- Cycles with trailers for children or deliveries
 - Tricycles
 - Tandems with two or more seats
 - Inclusive cycles designed for disabled people e.g. quadricycles and hand cycles
 - Recumbent cycles
 - Cargo bikes (for carrying goods or children)
 - Small-wheeled foldable cycles
- 4.11.3 Inclusive cycles are those that are suitable for people with disabilities to use, and can be tricycles (both upright and recumbent), handcycles, tandems or solo bikes adapted to suit the rider’s disability. Although the dimensions of these cycles varies, a ‘Standard Inclusive Cycle’ has been defined which is an abstract composite of all the cycles that might reasonably use the cycle network. It includes the solo cycle, tandem, cycle + trailer, cycle + trailer bike, tricycle (upright and recumbent), hand-cycle, cargo-bike, cargo-trike, wheelchair and the mobility scooter. Designing the cycle network around this design model ensures that it is accessible to all.

Table 4.3 – Cycle Dimensions and Turning Circles

Type of cycle	Typical length (mm)	Typical width (mm)	Minimum turning circle (mm)	
			Outer radius	Inner radius
Conventional cycle	1,800	650	1,650	850
Cycle with 850 wide trailer	2,700	850	2,650	1,500
Tandem	2,400	650	3,150	2,250
Standard Inclusive Cycle	2700 (max)	1200 (max)	3,400 (max)	100 (min)

Note – based partly on LTN 2/08

- 4.11.4 It is unusual for the dynamic envelope of any cycle to be any greater than 1.4m, and consequently, any one-way cycle lane or track should be at least 1.5m wide, or it will risk excluding some types of user. The use of chicanes or gates aimed at restricting unauthorised access to paths (e.g. by motorcycles) may also obstruct these users, and therefore must not be used unless in exceptional circumstances. Further advice on access controls is given in Chapter 6.
- 4.11.5 Turning circles are an important consideration, both in terms of the space required to execute a full turn, which LTN2/08 calls the ‘outer radius’, and the space required to turn around a fixed object, or ‘inner radius’. For conventional cycles, the inner radius should be at least 0.85m and outer radius 1.65m, although these will require the cyclist to be travelling very slowly, and larger radii are appropriate at higher design speeds. The turning radii of non-standard cycles may be considerably larger than that of standard ones.
- 4.11.6 Table 4.3 above (adapted from LTN 2/08) summarises the key dimensions and minimum turning circles of different types of cycle.

- 4.11.7 Minimum corner radii for cycles travelling at various speeds exceed the minimum values in Table 4.3 and are given in Table 4.5.

4.12. Headroom

- 4.12.1 Cyclists require a minimum of 2.7m of headroom. This may be reduced to 2.4m where the obstruction is for less than 23m (such as where a traffic sign spans the carriageway) (Highways Agency, 2005b) or 2.3m at instantaneous obstructions such as signs.
- 4.12.2 Every effort should be made to provide this headroom; where this cannot be achieved (i.e. at a low railway bridge), 'limited headroom' signing should be provided in a similar fashion as for a low bridge over a carriageway (see Traffic Signs Manual, Chapter 4, Section 7 (TSO 2013), in preference to 'Cyclists Dismount' signs, the use of which should be avoided on active travel routes.

4.13. Cycling Speeds

- 4.13.1 The speed of different people on cycles can vary widely – ranging from walking pace (for children or people using cycles adapted for users with disabilities), up to 25mph or more on steep, downhill gradients. This presents a challenge for those trying to plan to accommodate the variety of cyclists' needs.

Table 4.4 – Typical desired speeds and proportion of trips, by cycle user type

User type	Typical desired speeds	Current approximate share of cycling trips
School travel	5-15mph	10%
Leisure	5-15mph	36%
Adult shopping or other	10-15mph	15%
Adult commuting	10-20mph	39%

Note: Based on "Design speeds and acceleration characteristics of cycle traffic for use in planning, design and appraisal", by Prof John Parkin and Jonathon Rotheram, and the National Travel Survey.

- 4.13.2 Although speeds do vary, the aim should always be to create facilities that suit as wide a range of people as possible, rather than setting out to provide 'dual networks' for novice and experienced cyclists. This can be done by creating facilities that enable people to travel at the speed they wish to, with sufficient space to overtake.
- 4.13.3 Most cyclists will wish to travel between around 12mph (20km/h) and 18mph (30km/h). Based on these speeds, plus a lower design speed of 6mph (10km/h), the key geometric criteria shown in Table 4.4 are recommended.

Table 4.5 – Minimum Forward Visibility, Horizontal and Vertical Curvature

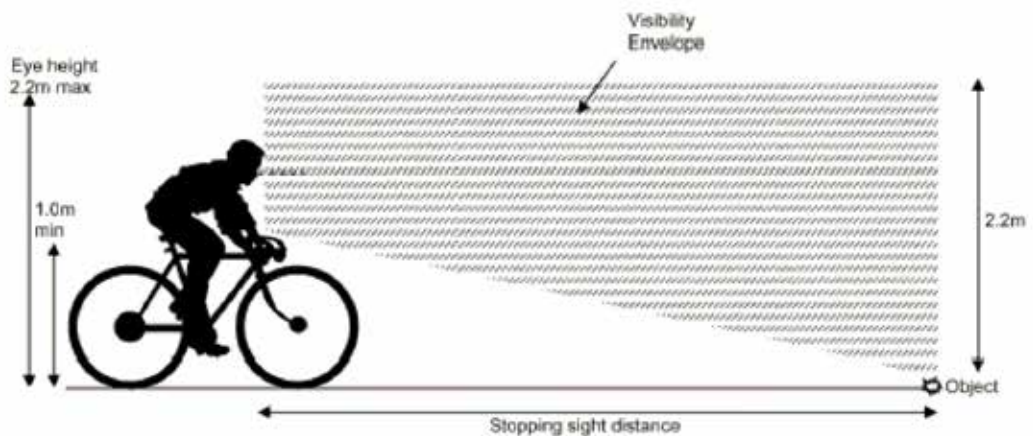
Parameter		Design Speed		
		18 mph/ 30km/h	12 mph/ 20km/h	6 mph/ 10km/h
Minimum Forward visibility	Desirable	80m	50m	30m
	Preferred	30m	30m	30m
	Absolute	25m	15m	10m
Minimum Horizontal Curvature, Inner Radius	Absolute	25m	15m	4m
Vertical Curvature, Crest K Value	Desirable	5.0		
	Preferred	1.6		

Note: Based on Cardiff Cycle Design Guide

4.13.4 Visibility should be available over the following envelope, as shown on Figure 4.4 below:

- Eye height in the range of 1.0m to 2.2m to accommodate the wide variety in cyclists' riding positions
- Ground level, so as to observe any surface defects in good time
- Objects at a height of 2.2m, so any low obstacles can be seen in good time

Figure 4.4 – Cyclists' visibility envelope – reproduced from DMRB TA90/05

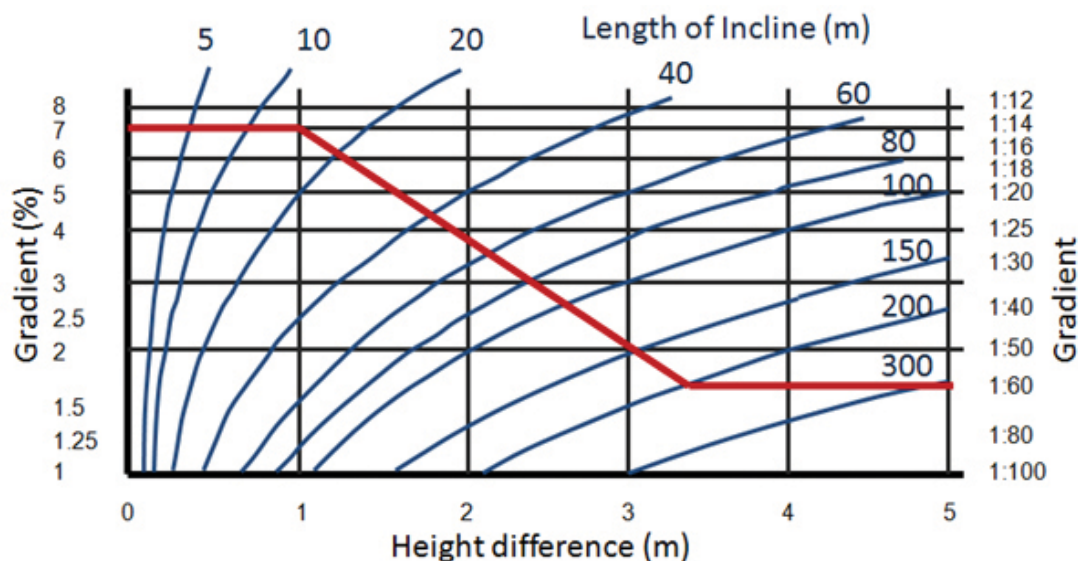


4.14. Gradients

- 4.14.1 Sections of rising or falling route create specific challenges for cyclists. Ascending even short uphill gradients considerably increases the discomfort for cyclists. It is particularly difficult for less able cyclists, such as older people, those with impairments or people using adapted cycles, which tend to be heavier and offer limited ability for short-term increases in power. Downhill gradients can lead to rapid increase in speed, which increases the risk of loss of control.
- 4.14.2 Where possible, routes should avoid the steepest gradients. The priority for improvement to routes should be focused on routes with least ascent or descent.
- 4.14.3 The maximum desirable gradient depends on length. People are better able to tackle short steep gradients, but even relatively gentle gradients can become difficult if they are sustained.

- 4.14.4 Figure 4.5, adapted from the Design Manual for Bicycle Traffic (CROW, Netherlands), shows the relationship between desirable maximum gradient and the length of the incline, with the red line on the chart showing the desirable maximum values.
- 4.14.5 For example, with a length of incline of 10m, a maximum gradient of 7% is acceptable, but with an incline 150m long, the gradient should be no more than 2%. Hills over 200m long should be no more than around 1 in 60 (1.7%).
- 4.14.6 The graph can also be used to look at options when the height difference is known. For example, when the height difference is 2m, either a 100m incline at 2% or a 60m incline at 3.3% is acceptable.

Figure 4.5 – Relationship between height difference and desirable gradient



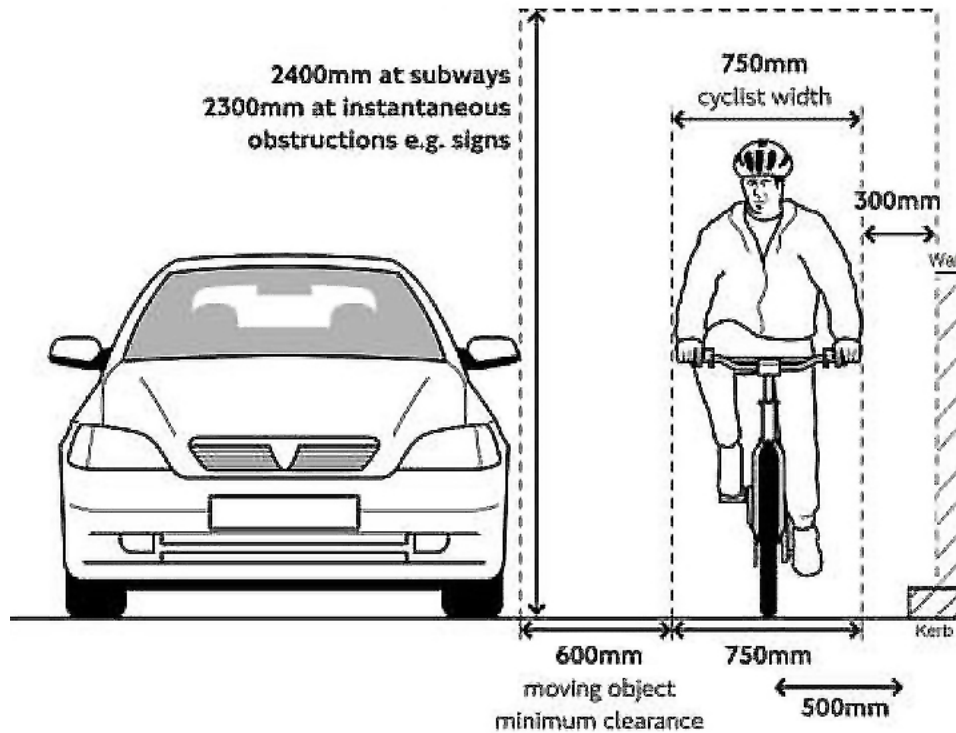
- 4.14.7 On uphill gradients cyclists' speeds will decline significantly below the 10-15 mph that could be expected from most cyclists on a level gradient. At even relatively modest uphill gradients of 3% or so, the speed achieved by a cyclist could fall to the level - typically around 7mph - at which the stability of the cycle is reduced. The additional space needed by slow moving cyclists should be considered.

- 4.14.8 On downhill gradients cyclists' speeds will rapidly increase, with a speed of 20-25mph easily achieved. Care should be taken to allow cyclists to maintain this momentum as much as possible, by increasing design speeds at the foot of inclines. Where space is limited it may be preferable to provide wide lanes or tracks for uphill cyclists. Downhill cyclists are more likely to be able to maintain a speed similar to general traffic and therefore may have less of a need for provision of cycle tracks or lanes.

4.15. Space for Cycling

- 4.15.1 Movements from side to side are necessary to stabilise a cycle when in motion: these lateral movements increase as speeds diminish. At a reasonable speed (7mph or above) the dynamic envelope required by a cyclist is approximately 1m in width, i.e. around 200 mm more than the width of the cyclist when stationary, thus making the typical dynamic envelope of 1m. At slower speeds, for example when cyclists are travelling up a steep gradient, it is greater.
- 4.15.2 The space required to cycle is normally more than this. It also needs to take into account:
- wobble room, so that cyclists of all abilities feel they have the space to move comfortably.
 - the position, height, width and profile of any continuous or intermittent physical barriers around pedal height, such as full-height kerb segregation or light segregation. Objects with a vertical profile need a wider clearance than rounded or sloping objects, and the risk of clipping a pedal is greater for higher kerbs
 - any physical barriers at handle-bar height or above, typically walls, guardrail, sign or signal poles and lamp-posts
 - the width of adjacent traffic lane(s) or, how close vehicles will come to encroaching on the cycling facility
 - the speed and width/type of vehicles moving alongside the cyclists
 - volume of pedestrians on adjacent footways
 - bus infrastructure
 - the geometry of the lane or track – cyclists require greater widths on curves, such as where the lane or track deviates around parked cars, loading bays, bus stops, etc.

Figure 4.6 – Basic Space Requirements for Cycling



Note: people using non-standard cycles may occupy more space – see Table 4.3

4.15.3 Based on guidance contained in LTN2/08, the recommended additional space (measured from the wheel) required to accommodate the fear of encountering any upstand or vertical structure parallel to the route is:

- 250mm for kerbs under 50mm high
- 500mm for kerbs over 50mm high
- 750mm to sign posts and lamp columns
- 1000mm to continuous features such as walls, railings or bridge parapets

4.15.4 In addition, cyclists may need to deviate from their path by around 500mm to avoid gullies or potholes.

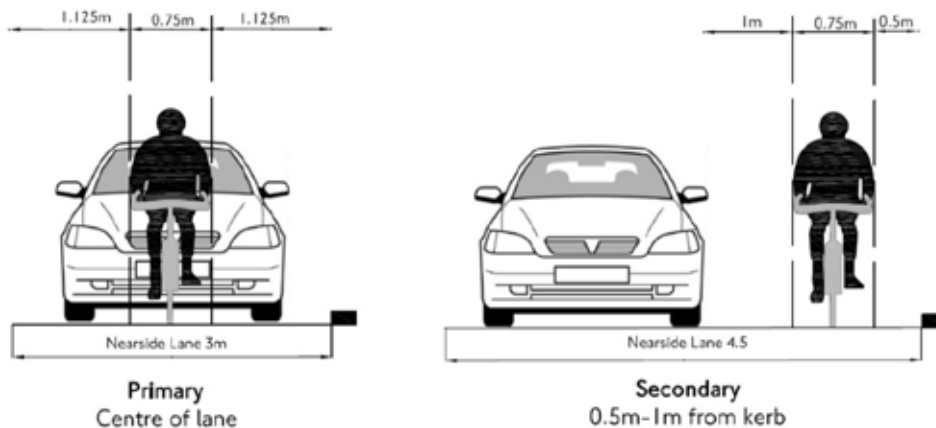
- 4.15.5 As with any form of transport, people cycling may be travelling with someone else. Cycling is a social activity and many people will wish to be able to cycle in comfort side by side, particularly in the case of parents accompanying children, or when they wish to safely overtake another cyclist. It is important that cyclists are able to choose their own speed so that they can make progress commensurate with the amount of effort they wish or can put in.
- 4.15.6 A clearance of 0.5m between dynamic envelopes is required for cyclists to pass or ride abreast comfortably and safely. Based on the typical dynamic envelope of 1.0m, this would mean that an effective width of 2.5m is required to permit safe overtaking or social cycling. A width of 2m allows these activities to take place with care, and should therefore be regarded as a desirable minimum on routes designed for one-way cycling. It should be noted that, with a lane or track width of 2.5m, many non-standard cycles cannot overtake or cannot be overtaken without difficulty.
- 4.15.7 Narrow (below 1.5m) cycle lanes should not be used on roads as they can place cyclists in greater danger, as there is evidence that the presence of the cycle lanes leads to closer overtaking by drivers (Parkin J & Meyers C, 2009).
- 4.15.8 When moving in opposing directions, there is a risk of head-on collisions, which can be severe if cyclists are moving at high speeds. At least 1.0m clearance between cyclists is therefore recommended. This gives rise to a desirable minimum width requirement of 3.0m for two-way tracks. This minimum width would allow overtaking or social cycling where there is a light flow in the opposing direction.

4.16. Cyclists and Motor Vehicles

- 4.16.1 The minimum clearance between a moving motor vehicle and the outside of the dynamic envelope of a cyclist should be 1.0m where the motor vehicle is travelling at 20mph or less, and 1.4m at 30mph or more. Where motor vehicles are more likely to include buses and other large vehicles, more clearance may be needed, and any measurement should be taken to the furthest side extremity of the vehicle. This has implications for the design of pinch points and for the width of general traffic lanes when cyclists are sharing carriageways, which are discussed below.

Road positioning of cyclists

Figure 4.7 - Primary and Secondary Road Positioning



- 4.16.2 National Standards Cycle Training is taught in schools in Wales. It teaches pupils three levels of skills, from basic bike handling to riding on busy roads and junctions.
- 4.16.3 The training teaches cyclists to adopt two main riding positions when riding on carriageways – the primary and secondary positions. Designers need to be aware of these riding positions and design on-carriageway cycle routes with them in mind.
- 4.16.4 Cyclists are taught to ride in the secondary position, between 0.5-1m from the kerb or other fixed object, whenever it is safe and reasonable for them to do so, and it is safe for motor vehicles to pass them. This position ensures that they are far enough out to be able to avoid drains or debris near the gutter, but can also move in either direction to avoid potholes or utility access covers.
- 4.16.5 When the available width means that it is not safe for the cyclist to be passed, for example when approaching hazards such as side-roads, pinch points or junctions, the advice to cyclists is to take the primary position in the centre of the traffic lane. Using the centre of the lane increases the cyclists' visibility to other road users and reduces the risk of inappropriate or risky overtaking manoeuvres.

- 4.16.6 While this style of riding can be safe, it is unlikely to be attractive to more nervous, less experienced cyclists or those considering taking up cycling. It is therefore not appropriate to design active travel routes that depend on cyclists taking the primary position except in situations when motor traffic volumes and speeds are low.

4.17. Pinch Points

- 4.17.1 It is important to ensure that chicanes and pinch-points are designed in such a way that cyclists are neither squeezed nor intimidated by motor vehicles. The preferred option is to provide sufficient width so that the cyclist can remain in the secondary position and be passed safely. Alternatively, when speeds are low, the alternative is for cyclists to be placed in the primary position by keeping the space tight. This will not be desirable over long lengths, as cyclists will feel intimidated, unless motor traffic volumes are low. The appropriate widths are given in Table 4.6 below.

Table 4.6 Lane widths at pinch points where no cycle track or bypass is provided

Speed Limit	Lane width (m)	
	<5% HGVs	>5% HGVs
20 mph	2.5 maximum	3.0 maximum
30mph or above	4.0 [†] minimum	4.0 [§] minimum

[†] 3.0m may be used if frequent traffic calming measures are present along the length of road
[§] Where 85th percentile speeds exceed 30mph, this should be increased to 4.5m

- 4.17.2 Table 4.6 shows that pinch points in the critical width range of between 3.1m and 3.9m should not be used. At this width drivers will be tempted to pass cyclists with insufficient clearance.

4.18. Road profiles and their effect on cyclists

- 4.18.1 In places where cyclists can be expected to share the road with other users, the width of the road profile has a profound effect on cyclists' comfort. Cyclists will feel uncomfortable if they sense that they are impeding motor traffic, while drivers may become impatient if they cannot easily overtake. This may in turn lead to closer overtaking manoeuvres, which are uncomfortable and potentially dangerous.



- 4.18.2 Designers should always be aware of the effect of their lane and carriageway width choices on cyclists, even if they are designing a route that has not been identified as an active travel route. The obligation for highway authorities to consider cyclists when discharging their general functions is discussed further in Chapter 9.

Critical Lane Widths

- 4.18.3 Unless motor traffic flows are light, and drivers can cross easily into the opposing carriageway to pass cyclists, traffic lane widths of less than 3m or more than 4m should be used. Lane widths in the critical range of 3.2m to 3.9m should be avoided.
- 4.18.4 The effect on typical carriageway profiles is as follows (in streets with car parking the dimensions given below are based on the dimensions between parking bays).

Wide streets – 9m minimum two-way carriageway

- 4.18.5 These widths give adequate space for drivers to overtake cyclists comfortably, however, speeds can be high. Within the overall carriageway width available consideration should be given to provision of cycle lanes or tracks, which should be wider where speed limits are higher.

Critical width streets – 7.3m two-way carriageway

- 4.18.6 The 7.3m carriageway has been the default standard in the UK for many years, but it is important that designers recognise that this width often creates unsuitable conditions for cycling, and not of a standard that is now recommended under the Active Travel Act for active travel routes.
- 4.18.7 Where traffic volumes are low and sightlines are good, such roads can provide reasonable space for drivers to overtake safely by crossing into the other carriageway. Where volumes are higher, and drivers have to wait for gaps in oncoming traffic to pass cyclists, such roads create very uncomfortable conditions for cyclists, with drivers tempted into close overtaking.
- 4.18.8 Designers should therefore not use 7.3m wide carriageways unless cyclists are accommodated outside the carriageway, or traffic volumes are low, for active travel routes.

- 4.18.9 Where an existing 7.3m carriageway is being considered as an active travel route, it may be possible to make conditions suitable for cycling by reducing the speed and volume of motor traffic to recommended levels. Another alternative would be to make the route one way for motor vehicles, which would allow (for example) two 2m cycle lanes or tracks and a single 3.3m general traffic lane.
- 4.18.10 Simply providing narrow (<1.5m) advisory cycle lanes within a 7.3m carriageway is not a recommended approach.

Narrow width streets – 6m maximum two-way carriageway

- 4.18.11 Narrow roads are objectively safer for cyclists as drivers are less likely to be able to overtake, and cyclists are able to be more assertive in their use of the space. However, such streets should be short, traffic calmed, and designed to make it clear that cyclists have priority.

4.19. Road and path surfaces

- 4.19.1 Cyclists are particularly susceptible to uneven or hazardous road surfaces, such as potholes, ruts, poorly maintained ironwork or slippery surfaces. Most cycle crashes involve no other vehicle and many are due to poor surface conditions.
- 4.19.2 Rough surfaces also greatly increase the resistance and energy required to cycle the route, reducing comfort. Routes for cyclists must be constructed to be smooth, with bituminous surfaces laid by machine, rather than by hand. Care must be taken to ensure that routes near vegetation are constructed with a properly drained base course and designed to prevent root damage. As with any infrastructure, routine maintenance such as path sweeping, vegetation clearance and winter maintenance must also be provided on active travel routes, whether on or off-carriageway (see Chapter 10).

4.20. Summary of Cyclists' Needs

- 4.20.1 As with pedestrians, the design of the active travel network should ensure that cyclists are able to reach their destinations on routes that are coherent, direct, safe, comfortable and attractive. These needs are expressed in more detail as network requirements in Chapter 5.



Coherent

- 4.20.2 The network must be coherent; it must link all the places cyclists want to start and finish their journeys with a route quality that is consistent and easy to navigate. Abrupt changes in the level of provision for cyclists – such a busy high speed roundabout - will mean that an otherwise serviceable route becomes disjointed and unusable by the majority of potential users.

Direct

- 4.20.3 Routes for cyclists must provide the most direct and fastest route from origin to destination. In order to make cycling preferable to driving, routes for cyclists must be at least as direct – and preferably more direct - than that available for private motor vehicles. An indirect designated route for cyclists may result in some of them choosing the more direct, faster route, even if it is unsuitable for cycling

Safe

- 4.20.4 Cycle networks must not only improve cyclists' – and other road users' – safety, but also their feeling of how safe the environment is. Consideration must be given to reducing the speeds of motor vehicles to acceptable levels, particularly when cyclists are expected to share the carriageway. The need for cyclists to come into close proximity and conflict with motor traffic must be removed, particularly at junctions, where the majority of crashes occur. Good quality surfaces are needed, not least to prevent cycle-only casualties.

Comfortable

- 4.20.5 Smooth surfaces, with minimal stopping and starting, without the need to ascend or descend steep gradients and which present few conflicts with other users create comfortable conditions that are more conducive to cycling. The presence of high speed, high volume traffic affects both safety (as above) but also the comfort to the user.

Attractive

- 4.20.6 People cycling are more aware of the environment they are moving through than those in cars or other motor vehicles. Cycling is a pleasurable activity, in part because it involves such close contact with the surroundings. The attractiveness of the route itself will therefore affect whether users choose cycling.
- 4.20.7 How these principles are applied in planning networks and routes is covered in Chapters 5 and 6.



Key References

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Cycling Embassy of Denmark (2012) Collection of Cycle Concepts

Davies DG et al. (2003) Cycling in Vehicle Restricted Areas: TRL583

Department for Transport. (2013a) ATT0321: Confidence cycling on the roads

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Parkin J & Meyers C (2010) 'The effect of cycle lanes on the proximity between motor traffic and cycle traffic.' Accident Analysis and Prevention. 2010 Jan;42(1):159-65.

Sustrans (2012) A Guide to Controlling Access on Paths

Transport for London (2011) Attitudes to Cycling

B

6.11. Segregation between Cyclists and Pedestrians DE023, DE024, DE032 and DE033

- 6.11.1 Where cyclists are routed onto off-carriageway tracks, through green spaces and on highways at both links and junctions, there will usually be a need to consider how they interact with pedestrians. There are two possible approaches to the design of routes where pedestrians and cyclists are using the same route, often referred to as 'shared use':
- segregated provision, where cyclists and pedestrians each have their own defined space; and
 - unsegregated provision, where cyclists and pedestrians share the space
- 6.11.2 Guidance on the design of shared use facilities is contained in the Department for Transport's Local Transport Note 1/12, Shared Use Routes for Pedestrians and Cyclists, although it should be noted that this has not formally been adopted in Wales.
- 6.11.3 Early consultation with relevant interested parties, such as those representing disabled people, walkers and cyclists, should be part of developing the design of a cycle track which interacts with pedestrians, including decisions on segregation. Designers are encouraged to think through their decisions rather than start from a default position of implementing any particular feature.
- 6.11.4 In general, separate provision for cycling will tend to provide a route where people are able to maintain their desired speed. This will be important on active travel routes, which are designed to provide for utility trips and to provide a realistic alternative to the car over short distances.
- 6.11.5 For a segregated path to operate effectively adequate width should be provided for each user group and segregation should be effective, as discussed below. Non-compliance with segregation, where and when it occurs, may lead to increased potential for conflict amongst all users. Where levels of non-compliance are likely to be high due to there being inadequate space for effective segregation, options will include:
- increasing the path width
 - providing an unsegregated track
 - providing an alternative route for cycling



6.11.6 Factors that will need to be taken into account when deciding whether a route should be segregated will include:

- pedestrian and cycle flow
- cycle speed
- cycle journey purpose
- visibility
- whether significant numbers of vulnerable users are expected – elderly, disabled, children
- available width/presence of pinch points e.g. bridges
- ‘exchange’ activity – shopping, playing etc.

6.11.7 The key pros and cons of each type of provision are given below.

Advantages of effective segregation include:

- cyclists can maintain a higher speed
- helps cyclists to pass pedestrians engaged on ‘exchange’ activities – e.g. playing, shopping
- more comfortable for pedestrians who may not expect the presence of cyclists
- less intimidation for vulnerable pedestrians, particularly the visually impaired
- reduced perception of conflict by both groups
- keeps cyclists away from driveways as the cycle track is usually located next to the carriageway

Disadvantages of segregation include:

- segregated routes can encourage territorial behaviour which can raise conflict if the segregation is ineffective.
- where pedestrians walk in groups (especially at weekends and school journeys) they are more likely to ignore segregation unless widths are adequate
- can be more costly to provide, and require more land availability

Advantages of unsegregated routes include:

- unsegregated routes are more flexible – for example, cyclists may be the majority group during the weekday peak, and pedestrians in groups during weekends.
- unsegregated routes with a single surface are better able to accommodate larger cycles, such as those used by disabled people, and people in wheelchairs
- unsegregated routes may be cheaper to construct and maintain due to less complex engineering and a narrower width. (Construction costs can be up to three times higher if segregation by kerb is used).
- in many cases unsegregated routes require fewer signs and markings, thereby offering a less urban and intrusive solution.
- can be a useful way of accommodating many different movement types especially at crossings, bus stops and complex junctions

Disadvantages of unsegregated routes include:

- potentially intimidating for pedestrians, particularly visually impaired people, and especially with high volumes of cyclists.
- can be frustrating for cyclists who have to limit their speed to accommodate pedestrians

Type of segregation

- 6.11.8 Good compliance with segregation will not be achieved at all times unless adequate width is provided for each user group and the means of segregation is effective.
- 6.11.9 Segregation should normally be achieved using design features such as contrasting materials, a change in levels or a grass verge (see Photo 6.3). Material choices that give a good tonal contrast will help all users to understand the separation between types of user, and particularly valuable for visually impaired pedestrians. Typically this might involve using asphalt for cyclists and light coloured pavements for pedestrians.
- 6.11.10 Segregation using only simple white lines (Diag 1049) (which are not detectable by blind users) or a raised white line delineator (Diag 1049.1) is an option, but it is rarely respected by pedestrians, unless cycle flows are high or there is generous width, and should not normally be used.



Photo 6.3 – Segregated footway and cycle track at Southend, using contrasting colour and a flush kerb to separate pedestrians and cyclists



Monitoring and Management

- 6.11.11 Following the introduction of any facility where cyclists are routed alongside or with pedestrians, it is advisable to monitor its performance including, where practicable, engagement with potential users who may not use the path because of its design. This will enable any concerns to be identified early on and suitable mitigating measures implemented if required (see also Chapter 11).

6.12. Pedestrians on Links – DE001, DE002, DE003 and DE004

- 6.12.1 Provision for pedestrians will vary depending on the characteristics of the surrounding environment and the nature of the route. Most routes will be on footways adjacent to carriageways. Other walking routes will generally be along footpaths away from roads, such as paths through housing estates, parks and alongside waterways (DE2). Where footways or footpaths are being designed as a shared use path for pedestrians and cyclists (segregated or unsegregated) refer to Section 6.11 and DEs 023, 024, 032 and 033.

- 6.12.2 In order to be attractive to pedestrians walking routes should follow desire lines as closely as possible. Walking routes should be designed with sufficient widths and to minimise the need for changes of grade, whilst remaining close to the desire lines. All changes of grade should be designed to be accessible to all users.

Widths

- 6.12.3 The width of a footway or footpath will need to be assessed taking account of the pedestrian flow, local land use and activity and the composition and the adjacent vehicle speeds and flows.
- 6.12.4 Basic minimum widths are given in Chapter 4 and are summarised on DE001 and DE002, but where pedestrian flows are high, for example at significant trip generators such as schools and retail centres, a detailed assessment of pedestrian capacity and comfort should be made (see TfL Pedestrian Comfort Guidelines, summarised in Chapter 4). Where there are high numbers of static pedestrian activities such as photography near tourist attractions, additional space for moving pedestrians will be needed.
- 6.12.5 Where a footway is adjacent to a road with high vehicle speeds or a high proportion of HGVs consideration should be given to providing a margin to separate the footway from the road, or to providing additional footway width. Footway widths may be increased by reallocating road space away from motor vehicles to pedestrians or increasing the usable footway width by removing or rationalising street clutter pavement and parking.
- 6.12.6 Well designed, functional street furniture is a vital part of the daily operations of the street environment. However, poorly designed and poorly placed street furniture can quickly develop into street clutter which can be hazardous (particularly for the visually impaired) and ruins the aesthetics of the street environment. Footways should be free of obstructions, with unnecessary street furniture being removed and the remainder located in a street furniture zone out of the main pedestrian flow. Items such as litter bins and other potential obstructions should have a minimum height of 1m and be continuous to the ground avoiding projecting bins sited on posts. DE1 provides guidance on the need for hazard protection to isolated objects.



Photo 6.4 - Street clutter obstructing and narrowing the cycle track



6.12.7 In Wales footway parking is not generally prohibited, but local authorities can prohibit footway parking through a Traffic Regulation Order.

6.12.8 Alternatively, it is possible to deter footway parking through physical measures, such as by installing bollards, raised planters or other street furniture, and by clearly indicating where people should park. These features will need to be well designed and located so that they themselves do not pose a problem.

Build-outs

6.12.9 Build-outs can be used to locally widen a footway into the carriageway to provide additional footway width at particular features such as bus stops. They can also be used to restrict the carriageway width in order to calm traffic.

6.12.10 Build-outs may be provided at pedestrian crossing points to reduce the crossing width and to enable pedestrians to wait to cross in a more visible position. In all cases, for controlled crossings, tactile paving to indicate the crossing to blind and partially sighted people should extend back to the building line.

- 6.12.11 Build-outs can have a negative impact on cyclists, particularly if the remaining traffic lane would be in the critical width as defined in Section 4.17. Where pinch points are used, consideration should be given to the provision of cycle bypasses, as shown on DE007.
- 6.12.12 The angle of taper for a build-out needs to take account of the likely approach speeds of traffic. Where there is a likelihood of cyclists using the road and there are no cycle bypasses, the effect of a build-out on cyclists needs to be considered so that it does not force a cyclist out into the path of other vehicles, and should be no greater than 1 in 10.
- 6.12.13 It is essential that a build-out is conspicuous in both daylight and darkness. This may be achieved by positioning a reflective or illuminated bollard or other feature on the facing corner of a build-out.

Gradients, Ramps and Steps

- 6.12.14 The longitudinal profile of a footway adjacent to a carriageway should generally follow its vertical alignment, although there may be situations where a footway can usefully be maintained on a steady vertical profile while the carriageway goes through a sharp dip or crest. In these situations a retaining wall or slope between the carriageway and the footway will be necessary.
- 6.12.15 The gradients of footways and footpaths should accord where with the guidance given in Chapter 4 and summarised on DE001 and DE002.
- 6.12.16 Ramps and steps are provided to facilitate a change in level or grade on a walking route but should only be used where a sharp change in level or grade cannot be avoided. Guidance on the design of ramps and steps are given on DE003 and DE004.
- 6.12.17 Steps should usually only be provided in conjunction with a ramp in order to retain accessibility for mobility impaired pedestrians. Steps can provide a useful shortcut to maintain desire lines where it is necessary to also provide a ramp to accommodate a change in level or grade. Steps should be well designed with highlighted nosings/edges and handrails to both sides, incorporating corduroy warning paving to the top and bottom, and visual contrast between elements should be used to highlight features such as steps, edges and handrails.
- 6.12.18 The suitability of any existing steps on active travel routes should be assessed against DE4, with improvements made where necessary. The provision of wheeling ramps for cycles on steps is discussed in Section 6.51.

6.13. Cycling on Links - Introduction

- 6.13.1 The starting point for the designing of links for cycling on active travel routes is given in Table 6.2, which relates minimum provision to cycle route type, motor traffic volume and speed.
- 6.13.2 This shows how these factors influence the decision on the need to segregate cyclists from motorised traffic, and demonstrates how restraint of traffic speeds and volumes can be used to create satisfactory conditions, capable of encouraging new and novice cyclists to use the route.

Table 6.2 - Preferred Minimum Provision - Cycle Links

Speed Limit	Number of motor traffic lanes	Motor traffic flow (AADT)	Preferred Minimum Provision by Cycle Route Type	
			Secondary cycle route	Primary cycle route
20 mph	Irrelevant	1-2500	Quiet Streets: combined traffic	Cycle Streets or Quiet Streets: combined traffic
		2000-5000		Cycle Lanes
		> 4000	Cycle Lanes	
30mph	2 lanes in total	0-5000		
		> 4000		
	More than two lanes	Irrelevant	Cycle tracks	
40mph and over	Irrelevant		Cycle tracks (excluding light segregation and hybrid tracks)	

Notes on Table 6.2:

- this table does not include the Basic Network or cycle tracks away from highways
- designers should always consider the potential to reduce motor traffic speed and volume to create acceptable conditions
- there is some overlap between motor traffic flow ranges to allow for flexibility
- speed means speed limit, but if actual speeds are significantly higher, consider next highest category of speed
- cycle tracks includes light segregation and hybrid tracks unless noted
- in rural areas achieving speeds of 20mph may be difficult, and so shared routes with speeds of up to 30mph will be acceptable, with motor vehicle flows of up to 1000 vehicles per day

- 6.13.3 In practice, a cycle route from one place to another will often involve sections of different types of provision: shared roads, cycle lanes, cycle tracks alongside the carriageway and cycle tracks away from the road. A safe and convenient transition between these different forms of provision is critical to ensure route coherence.
- 6.13.4 Cycle routes away from roads generally offer important additional links in the cycle network and can provide very high quality routes. The decision to provide these should be based on wider network considerations, looking for opportunities to create links through green spaces, along waterways and other types of environment.
- 6.13.5 Most cycle links will be provided along highways, and in deciding the appropriate form of provision consideration must be given to the following requirements, constraints and issues:
- physical dimensions of the highway, including available widths and gradients
 - cycle demand (including the type(s) of cycle users, the type of cycle route and the current and forecast volumes of cyclists)
 - adaptability of the design to accommodate future growth
 - pedestrian demands and provision
 - motor traffic speeds
 - motor traffic volumes, including the volume of HGVs
 - interface with adjoining sections of route
 - the type and arrangement of junctions, including the frequency of minor arm junctions, intervisibility with conflicting traffic, and the potential to provide cycle priority;
 - conflicting uses, such as bus stops, loading and parking
 - place functions and visual character
- 6.13.6 Full consideration should be given to options for the suitable provision for cyclists on the carriageway or in a separate space for cycling – either through motor traffic speed / volume reduction, junction treatment and reallocation of carriageway space – before considering taking space away from pedestrians to create cycle tracks or shared use paths.



6.13.7 Where it is necessary to create separate provision for cyclists within highways, segregation from motor traffic can take a number of forms:

- separation by time – using traffic signals to separate cycle movements from motor traffic streams
- light segregation - Intermittent physical separation from motor vehicles (e.g. use of refuges, planters, bollards, or other features)
- continuous physical separation that can be crossed by cyclists (e.g. low kerb)
- continuous physical separation that can only be crossed at designated locations (e.g. full height kerb, verge)

6.14. General Traffic Lane Widths and Car Parking

6.14.1 Designers will often need to consider the widths of general traffic lanes and parking spaces when designing active travel routes. In order to make separate provision for cycling, the reallocation of road space may be necessary (see Section 6.4 above). Designers will therefore need to assess the minimum width requirements of moving and stationary vehicles. When cyclists are sharing the carriageway, designers will need to consider how lane widths relate to the recommended positioning of cyclists (see Section 4.16).

Lane Widths

6.14.2 Figure 6.2, taken from Manual for Streets provides an indication of what various carriageway widths can accommodate and Figure 6.3, taken from the Cardiff Cycling Design Guide provides guidance on the size of vehicles that various traffic lane widths can accommodate; widths pertaining to trunk roads are given in TD27, although it should be noted that TD50 permits lane widths as narrow as 2.25m in certain circumstances on the approaches to traffic signal stop lines. Further guidance on traffic lane widths is given in Manual for Streets 2.

Figure 6.2 - Illustration of what various carriageway widths can accommodate (from Manual for Streets)

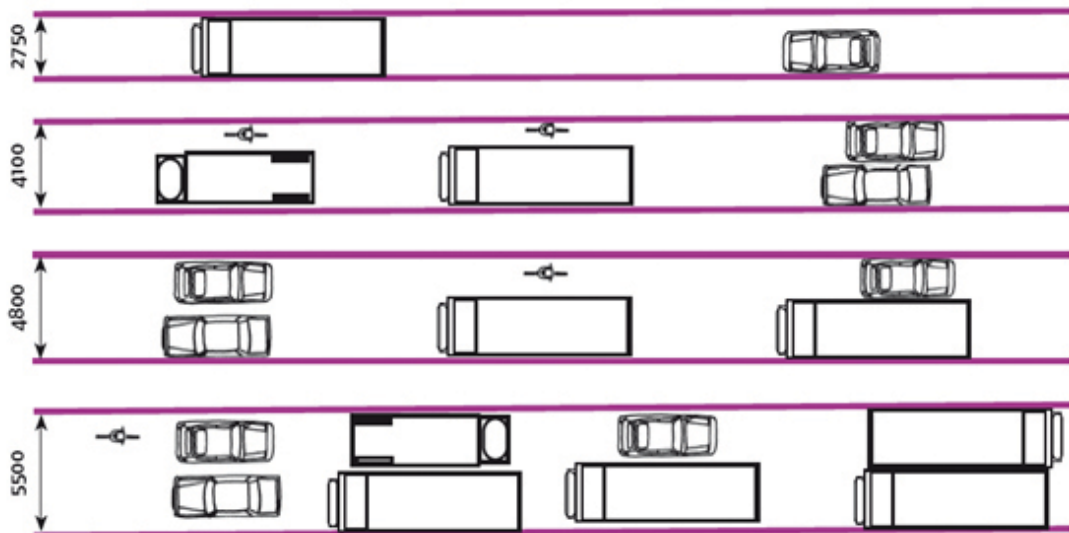
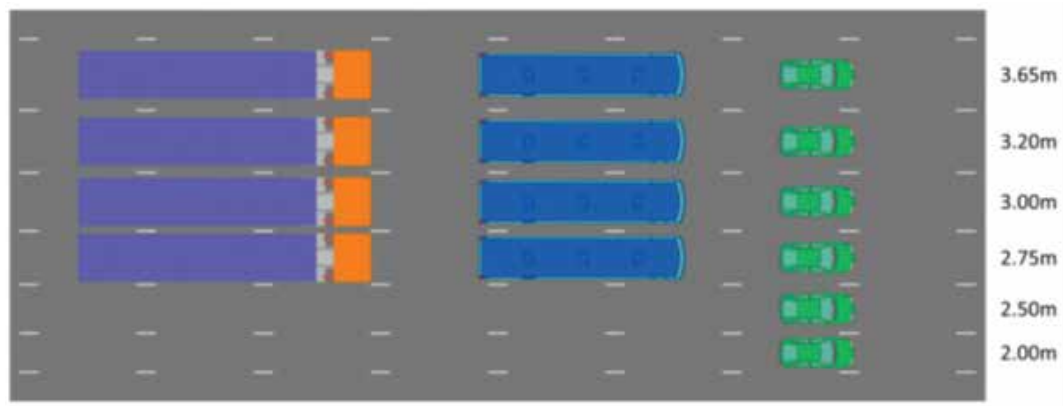


Figure 6.3 - Vehicles and Lane Widths (from Cardiff Cycling Design Guide)



- 6.14.3 Whilst traffic lane widths of 3.65m (metrication of 12 feet) have often been provided as standard in the United Kingdom, lane widths of 3.0 metres have been used in many parts of the country on urban roads for some time, and can accommodate most typical vehicles (including HGVs) at speeds up to 40mph (Transport and the Urban Environment, IHT 1997).
- 6.14.4 Where flows of large vehicles are low, and speeds are modest (less than 35mph), lane widths as narrow as 2.75m can accommodate car traffic comfortably. Larger vehicles can pass each other at this width at lower speed with care, although some drivers may choose to encroach slightly outside of lanes to pass (i.e. into an advisory cycle lane).



- 6.14.5 Where general lane widths exceed these values, designers should take the opportunity to reallocate space to walking and/or cycling. Where lane widths are in the critical range of 3.2m to 3.9m given in Chapter 4, conditions will be unsuitable for cycling on the carriageway unless traffic speeds and volumes are low so that drivers can cross easily into the opposing lane to pass a cyclist comfortably.

Car parking

- 6.14.6 Parked vehicles also require physical width. Whilst the standard width of 2.4m for a car parking space is considered to be ideal, in practice it is recognised that this will often be difficult to accommodate within many existing streets. A width of 2.0m is the preferred minimum – this provides a margin of error to allow for poorly parked vehicles. Widths between 1.8m and 2.0m are only recommended if providing parking is essential and space constraints require such narrow widths.
- 6.14.7 Cyclists who have received training are taught to ride well clear of parked cars to avoid collisions with opening car doors, and cycle lanes should be separated from car parking by a buffer zone for that reason – see DE015 below.

6.15. Cycling on Links: Cycling in combined traffic

- 6.15.1 There will be many streets where motor traffic volumes and speeds are sufficiently low to enable cyclists to share the road space with other traffic without the need for cycle-specific infrastructure. Table 6.2 gives the basic criteria for assessing whether conditions are suitable for different types of cycle route.
- 6.15.2 In designing such routes it is important not to assume that cyclists can simply ride with traffic, but to ensure that the layout of the street genuinely meets cyclists' requirements – in particular that the width of the carriageway meets the guidance given in Section 6.2 above.
- 6.16. Reducing Traffic Volumes and Speeds DE005, DE006, DE007**
- 6.16.1 Where traffic volumes and speeds exceed the values given in Table 6.2 consideration should be given to the potential to reduce traffic flows and speeds to appropriate levels so that cycling can be accommodated on the carriageway. Table 6.1 provides a list of suitable techniques - guidance on filtered permeability has been given in Section 6.6 above.

6.17. Contraflow Cycling DE009 and DE010

- 6.17.1 One-way streets and systems are very commonplace, having been installed for various reasons – to increase the overall capacity of a network, to ease motor traffic movements in narrow streets, increase residential parking capacity and to prevent through traffic for environmental and safety reasons. One-way streets significantly reduce the quality of the cycling network, which becomes less cohesive, less direct, less comfortable, less safe and less attractive. They may also risk inciting cyclists to travel illegally against the flow of traffic.
- 6.17.2 The permeability of the road network for cyclists can be greatly enhanced by exempting them from one-way restrictions, thus providing connections only available to cyclists. Two-way cycling should always be considered as the preferred option wherever it is proposed to introduce one-way working for general traffic. The operation of existing one-way streets should be reviewed with a view to permitting two-way cycling wherever safe and practicable. Scheme design should include consideration of the possible impact on pedestrians of all abilities and the ease with which they can understand that cyclists will be travelling in both directions.

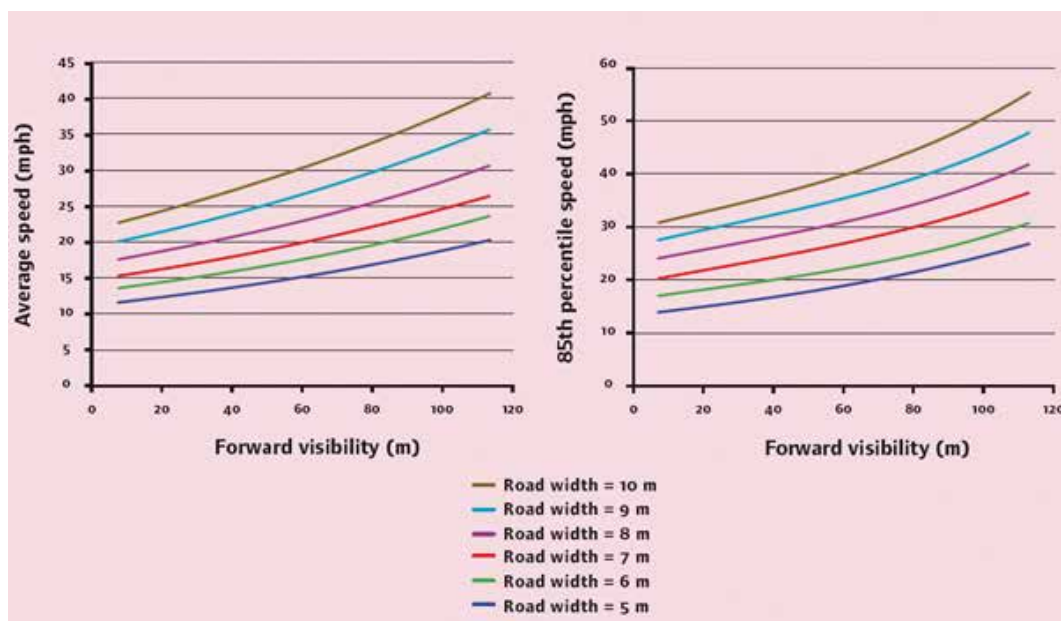
Photo 6.5 - Contraflow cycling in a narrow street with no marked lane – Brighton



6.18. Traffic Calming DE005, DE006 and DE007

- 6.18.1 Physical traffic calming measures are used to reduce motor vehicle speeds thereby improving safety for pedestrians and cyclists as well as improving living conditions for residents living along traffic calmed routes. Decisions on whether and how to implement traffic calming must take account of the requirements of the emergency services and of bus operators.
- 6.18.2 Traffic calming can significantly improve cycling conditions by reducing motor traffic speeds, but poorly designed vertical features can be uncomfortable for cyclists and horizontal deflections and pinch points can be intimidating.
- 6.18.3 Sinusoidal humps are much more comfortable for cyclists – see DE006 for details. Where pinch points are used, cycle bypasses should be provided – see DE007.
- 6.18.4 Speeds can also be reduced without overt traffic calming by changes in basic road geometry, such as using narrower carriageways, reducing forward visibility and using sharp changes in direction or vehicular priority.

Figure 6.4 - The relationship between carriageway widths, forward visibility and speed, from Manual for Streets



6.19. Quiet Streets DE011

- 6.19.1 Quiet Streets is a term given to urban cycling routes on low traffic speed and volume back streets, which are particularly suitable for new and less confident cyclists. Routes should maintain continuity for cycling and tackle physical barriers such as busy junctions without adequate cycle facilities, narrow paths, and should minimise diversions away from desire lines.
- 6.19.2 Cycle symbols to Diagram 1057 can be used to sign the continuity of cycle routes and indicate the correct positioning for cycling within the carriageway; in doing so they also raise motorist's awareness of cyclists, encouraging them to give cyclists space.

6.20. Cycle Streets DE012

- 6.20.1 A Cycle Street is a Quiet Street which also serves as a Primary Cycle Route. It should carry low volumes of motor traffic, high volumes of cycling, and provide cyclists with a level of service comparable to that provided by a high quality traffic free route.
- 6.20.2 The objectives of a Cycle Street are to:
- present a legible design recognisable to all types of user as a main cycle route
 - influence behaviour so that cyclists assume priority with drivers of motor vehicles behaving as 'guests', travelling at low speeds
 - maintain priority for cyclists, so that drivers do not overtake them
 - attract experienced cyclists as well as less confident cyclists

Photo 6.6 – Cycle Street on Jack Straws Lane, Oxford



6.20.3 In the consultation document which accompanied the draft amendments to TSRGD, the Department for Transport indicated that Cycle Streets could be subject to:

- a ban on motor vehicles overtaking cyclists
- an advisory speed limit of 15mph

6.20.4 Signs and orders to support these restrictions would require authorisation from Welsh Ministers and authorities who wish to trial such measures should seek advice from Welsh Government.

6.21. Cycle lanes DE009, DE013, DE014, DE015, DE016 and DE017

6.21.1 Cycle lanes are lanes on the carriageway that are reserved either exclusively or primarily for the passage of cyclists. Table 6.2 gives guidance on the conditions when cycle lanes are suitable on active travel routes.

6.21.2 Cycle lanes are normally located on the left or kerb side of the road and benefit from being included within the normal road maintenance programme. Because they are part of the main carriageway;

- the design of cycle lanes requires careful attention to turning movements of both cyclists and other traffic
- cyclists are not physically protected, and it is important that the traffic regime is appropriate to the presence of cyclists on the road
- they are only useful when clear of car parking and loading activity – cycle lanes should be preserved for the use of cyclists by the appropriate use of parking and loading restrictions. Careful attention to this design issue is required especially in town centres and around schools

6.21.3 There are two types of cycle lane: mandatory lanes are marked with a continuous white line supported by a Traffic Regulation Order (see Chapter 9), which prohibits motor vehicles from driving or parking in them during the hours of operation. There can be exceptions, such as for emergency service vehicles and access to private driveways.

6.21.4 Advisory lanes are marked with a broken white line which indicates that other moving vehicles should not enter unless it is safe to do so.

6.21.5 Where there are particular problems of overrun of cycle lanes by motor vehicles, raised thermoplastic markings can be used to help deter this.

- 6.21.6 Mandatory lanes provide greater protection for cyclists and should be used where possible. Mandatory lanes should operate at all times unless there are clearly justified reasons not to do so.

6.22. Car parking / loading and Cycle Lanes DE015

- 6.22.1 Kerbside vehicle parking or loading can often be dangerous for cyclists especially in a street with high vehicle turnover rates as there is a high risk of vehicle doors being opened into the path of cyclists within the cycle lane. It is therefore necessary that any cycle lane must pass parking areas with a sufficient dividing strip (buffer zone) or else be of sufficient width to enable cyclists to travel in the cycle lane away from the parking.

6.23. Cycle Lanes at Side Roads DE016

- 6.23.1 Cycle lanes should be continued across side road junctions to ensure continuity and help improve cycle safety. This can be achieved using a stretch of advisory lane, where the white line is broken, as continuous mandatory cycle lanes across side road junctions are not permitted. Under the forthcoming revision to the TSRGD it will be possible to use a road marking to diagram 1010 for this purpose (1m line, 1m gap). This is a more prominent marking than an advisory lane and is preferred.
- 6.23.2 It is recommended that cycle lane width be increased at side roads to encourage cyclists to position themselves further out from the kerb so that they can avoid vehicles nosing into the main road, and be more visible to drivers. A side road entry treatment should also be considered as this will reduce the speed of vehicles turning into and out of the junction.

6.24. Removal of centre lines DE017

- 6.24.1 The removal of centrelines is a useful option where carriageway widths do not otherwise permit the introduction of cycle lanes of adequate width.
- 6.24.2 In addition to increasing the width available for cyclists, the technique also has a speed reducing effect as motor traffic no longer has defined lanes in each direction. Where the need arises for on-coming motor vehicles to pass each other, this is achieved by both vehicles momentarily pulling over into their respective near-side advisory cycle lanes, having first checked to see they are clear of cyclists.



Photo 6.7 Cathays Terrace, Cardiff – Centreline removed to allow advisory cycle lanes to be introduced



6.25. Cycle lanes with light segregation DE018, DE019, DE020

- 6.25.1 The segregation provided by a cycle lane along the side of a road may be reinforced by “light segregation” from the main carriageway, by using intermittent low level physical features such as planters, wands (retroreflective collapsible bollards), proprietary raised features constructed from PVC or recycled rubber, or similar objects. The fact that the obstacles are intermittent allows cyclists to manoeuvre between the cycle track and the carriageway as necessary, avoids any impact on drainage and means that the design can be cost effective and flexible.
- 6.25.2 Transport for London (TfL) and several other local authorities are starting to incorporate this style of facility into parts of their cycle networks and a scheme has already been successfully introduced in Royal College Street, in Camden. Light segregation is commonly used in various cities including Barcelona, Seville and, New York, Montreal and Melbourne.
- 6.25.3 These features are not road markings and therefore no authorisation is needed from Welsh Ministers in order to use them.

Photo 6.8 – Light Segregated Cycle Lane, Royal College Street, Camden
(Note: lane marking should be on outside of raised features)



Photo 6.9 – Light segregated cycle track with wand at start, Salford, Greater Manchester
(Note – only one lane marking, outside the raised features, should be used).





6.26. Hybrid Cycle Tracks DE021 and DE022

- 6.26.1 Hybrid cycle tracks have a cycle facility raised slightly above the carriageway surface but sitting below the level of the footway. This type of solution is common in Copenhagen and elsewhere on the Continent, and it has been used at a small number of locations in the UK, most notably on Old Shoreham Road in Brighton. Hybrid Cycle Tracks are referenced in Local Transport Note 1/12 Shared Use Routes for Pedestrians and Cyclists.
- 6.26.2 The positioning of the track immediately next to the main carriageway means that transitions between a cycle lane and a hybrid cycle track (and vice versa) are very simple and comfortable for the user.

Photo 6.10 Hybrid Cycle Track – Old Shoreham Road, Brighton



6.27. Cycle Tracks Alongside The Carriageway DE023 and DE024

- 6.27.1 Where traffic volumes and / or speeds are above the thresholds indicated in Table 6.2 physical separation from motor traffic will be appropriate to provide cyclists with safe and comfortable space, through the provision of segregated cycle tracks.
- 6.27.2 Cycle tracks should be of adequate width, comfortable, continuous and link into surrounding cycling infrastructure. Preferably they will be provided through reallocation of road space from the carriageway; in most urban locations the conversion of footways to shared use should be the last resort.
- 6.27.3 Cycle tracks away from roads are dealt with in Section 6.30 below.
- 6.27.4 Cycle tracks alongside the carriageway can be either be two-way or one-way. Two-way tracks are usually provided only on one side of the road, but provision on both sides is useful when it is difficult for cyclists to cross major highways. One-way tracks are usually provided on both sides of the road, with cyclists travelling in the same direction as other traffic.
- 6.27.5 Historically most cycle tracks in the UK have been built as two-way, but this can create a number of difficulties for users:
- retaining priority over side roads / busy accesses is more difficult
 - greater conflict with vehicles at private accesses
 - complexity of design of crossings at traffic signal junctions and roundabouts
 - difficulty of linking with adjoining cycle network at each end of the scheme
 - poor accessibility to development along the route on the opposite side
 - conflict with pedestrians crossing the carriageway
- 6.27.6 One-way cycle tracks on each side of the road address most of the above issues.
- 6.27.7 Cycle tracks may either be segregated from pedestrians, or may be shared with them with no differentiation of space. Issues to be considered in deciding whether segregation is appropriate are covered in Section 6.11.
- 6.27.8 The recommended widths for two-way cycle tracks, whether segregated from pedestrians or shared, are the same as those included in the section on cycle tracks away from the road, including the extra width required where there are edge constraints.



6.28. Cycle track crossing of side roads DE025 DE026

- 6.28.1 Uncontrolled cycle track crossings at side roads should, wherever safe and practicable, give priority to cyclists crossing the side road. Crossings that give cyclists priority over vehicles on the side road will allow cyclists to continue without loss of momentum and present a strong promotional message about how non-motorised users are valued along a corridor.
- 6.28.2 Priority crossings may not be appropriate in all locations, and where the cyclist is expected to give way clear road markings may be necessary.
- 6.28.3 Factors to be considered when determining who has priority include: location, vehicle speed, visibility, number of pedestrian and cycle movements, number of vehicle movements and accident statistics and the feasibility of providing similar priority at nearby side road crossings.

Photo 6.11 – Priority crossing of cycle track over side road, Bristol



6.29. Cycle tracks in centre of carriageway DE027

- 6.29.1 An option which has been little used in the UK at present is to place two-way cycle tracks in the centre of single carriageway streets, or one way tracks alongside central reservations. This can provide a very good facility for cycling along busy highways, which is clear of obstructions such as bus stops and side roads. Providing good access to and from the central track is critical, which is typically achieved via crossings or suitably designed junctions, and dealing with any conflicts at major junctions along the route. It may be necessary to ban turns across the central track at side roads, if it is not possible to create a suitable junction arrangement. Providing regular pedestrian crossing facilities that are accessible to all people will also be necessary.

Photo 6.12 - Raised two way central track, Nantes (France)





Photo 6.13 - One way cycle track in central reservation, New York City



6.30. Cycle Lanes/Tracks at Bus Stops DE028 DE029 DE030 DE031

- 6.30.1 Bus stops can pose a difficulty for people using cycle lanes and cycle tracks adjacent to the carriageway – moving past a stationary bus will either involve passing the bus on the off-side, with potential conflict with buses entering / leaving the bus stop or passing traffic, or on the footway side, with potential obstructions by street furniture and conflict with waiting / alighting pedestrians associated with the bus stop.
- 6.30.2 There is no standard layout for cycle lanes / tracks at bus stops that can address all considerations and there are a wide range of possible layouts. Each site will need considering on its own merits, and the following points require particular consideration:
- available space for cyclists to pass a stationary bus should be provided wherever possible so that momentum is maintained
 - the bus stop should be apparent to cyclists, who will need to be able to adjust their behaviour and speed to reflect the additional risk of conflict with buses or pedestrians

- there will need to be somewhere for pedestrians to wait where they do not pose an obstruction to any cycle bypass
- there should be good intervisibility between pedestrians (those waiting for a bus as well as those passing) and cyclists, to minimise potential for conflict

6.30.3 Five possible options are covered on the Design Elements sheets for minimising conflict with pedestrians and buses, which are:

- cycle lane terminates at bus cage, with alternative route past stop highlighted
- cycle lane continues around bus stop, possibly in conjunction with a bus bay
- cycle track bypass to rear of bus stop
- cycle lane / track runs across bus boarder
- a shared use area at the bus stop, with cyclists giving informal priority to pedestrians

Photo 6.14 – Bus Stop Bypass, Brighton



6.31. Cycle Tracks away from Roads DE032 and DE033

- 6.31.1 Routes free from motorised traffic (often referred to as traffic-free routes or Greenways) can be developed in urban, urban fringe and rural areas, utilising a wide range of linear corridors. Developing routes that provide direct connections between journey attractors, and which maximise connectivity to other parts of the networks, are key to achieving high usage.
- 6.31.2 Generally these will be cycle tracks either with an adjacent pedestrian route or else designed for unsegregated shared use where pedestrians and cyclists share the same path; guidance on the segregation of cyclists and pedestrians is given in Section 6.11 above.
- 6.31.3 Key features of successful traffic-free routes include
- routes should be direct and follow desire lines wherever possible, while avoiding steep gradients;
 - route capacity and widths should be designed for peak forecast demand conditions
 - minimum visibility and corner radii should be maintained, based on the appropriate design speed.
 - good quality surface materials should be provided
- 6.31.4 Common examples of features which undermine otherwise good off-carriageway routes include restrictive access controls, vegetation growth that encroaches on the track width, poor or inadequate lighting or failure of the track surface after winter conditions.
- 6.31.5 Where routes have existing equestrian usage their needs should also be considered. They should not be disadvantaged by the provision of active travel routes. Equestrians should not be denied access to routes that they currently have the right to use by changing the classification of the rights of way. There needs to be clear signing of which routes are intended for use by equestrians.
- 6.31.6 Successful cycle tracks away from the road require proper consideration of each element of the design and construction process. These are:
- Design**
- understanding the role of the route within the wider network
 - understanding the types and future volumes of users
 - track width

- track alignment
- gradients

Construction

- formation and sub-base
- surfaces
- edges and verges
- drainage
- lighting
- ancillary works

Corridors for Traffic Free Routes

6.31.7 Traffic free routes come in a wide variety of forms, and a popular route may comprise one or several types that link to create a coherent corridor. The most common types of corridors used as traffic free routes are:

- urban parks
- urban corridors
- disused railway alignments
- seaside promenades
- canal and riverside tracks
- river and coastal flood banks
- footpaths and bridleways
- amenity spaces such as golf course, racecourses, stately homes
- abandoned road alignments
- through open space provided by new developments

6.31.8 Each corridor will present its own, sometimes unique, set of challenges that will need to be overcome.

Track Widths

6.31.9 Selection of an appropriate track width should accommodate forecast and target increases in users, including from planned land-use development. Providing a width greater than the minimum will increase the level of service for all users and accommodate future growth in active travel.



- 6.31.10 Walking and cycling are a social activities and this should be recognised in design if people are to be encouraged to travel actively. Routes should be wide enough to enable pedestrians to walk side by side and cyclists to ride two abreast wherever possible.
- 6.31.11 Available width will depend upon the nature of the route corridor. Re-using an old railway corridor is likely to permit a much wider track than a flood bank or canal towpath.
- 6.31.12 Cycle tracks should include additional width where they are bounded by vertical features. Only where there is open space on both sides is it practical to use the whole track width to cycle.

Junctions Between Traffic Free Routes

- 6.31.13 Cycles cannot turn right angles, and pedestrians will often cut a corner and so providing right-angled junctions between tracks will result in adjacent areas becoming a rough desire line. However, blind pedestrians use right angle turns to aid navigation so additional guidance for them may be needed.
- 6.31.14 Junctions between tracks should therefore have a minimum 2m curve radius or 45° chamfer.

Speed Control Measures

- 6.31.15 Generally the control of cycling speed is to be avoided, as it reduces the attractiveness of the mode as an alternative to short journeys by car. However excessive speeds by cyclists can be an issue where land or other constraints prevent minimum stopping distances or bends being provided; and on unsegregated shared use cycle tracks where approach speeds are high. Education of users may have some effect, but in many instances this will need to be complemented by physical measures.
- 6.31.16 Speed control options include:
- speed humps
 - bollards, including staggered layouts
 - deviations in the horizontal alignment
 - rumble strips
 - public art
 - signs/markings



6.31.17 Design issues to consider are as follows:

Accessibility

- accessibility to the track must be maintained for all legitimate users, including all types of cycle, pedestrians and wheelchair/mobility scooter users.
- any restriction in track width should slow down users as they negotiate it however a narrowing would also introduce a conflict point between users where different users have to give way to one another.
- width restrictions and barriers should generally be introduced as a last resort.

Siting of speed control measures

- careful consideration should be given to the location of any speed control measures and the distance between measures.

Visibility

- any feature that may present a hazard to users if encountered at speed should be clearly highlighted such that it is visible in daylight and darkness.

Maintenance vehicle access

- on many tracks it is necessary to facilitate access for maintenance, and other vehicles.
- this introduces additional complexity and any locking mechanisms could be subject to either the keys being lost or vandalism and would require additional maintenance.

Prevention of bypassing

- the design of any measure should ensure that any option for bypassing the measure provides at least the same level of speed reduction as the measure itself.

Speed humps

- if speed humps are specified in bituminous material consideration needs to be given to the ability of the contractor to construct the hump profile to acceptable tolerance. DE006 provides details of the preferred sinusoidal hump profile.
- precast concrete products are available which could be installed. However the cost of these units means that in most situations this option is likely to be prohibitively expensive. They also require a flat path profile otherwise they can rock and create a trip hazard.



- care should be taken not to locate speed humps on slopes such that the effect of the slope would be to increase the gradient of the hump beyond the maximum desirable slope of 1 in 20 (absolute maximum 1 in 12).

6.32. Cyclists on Links: Rural Roads

- 6.32.1 Whilst most cycling takes place in urban areas, some roads outside built-up areas provide key links for cyclists who live in rural areas when making active travel journeys to local facilities, including in nearby urban areas. Some designated areas consist of larger settlements surrounded by smaller settlements; the connecting routes between these settlements may be rural roads. Rural roads will also be used for leisure purposes by people enjoying the countryside.
- 6.32.2 Cycling on rural roads can often be difficult due to high traffic speeds. They often have poor visibility due to narrow carriageways with hedges and overgrown verges. It is therefore important that on active travel routes in rural locations, motor traffic speeds and volumes are reduced and suitable measures implemented to ensure cycling is safe and perceived to be safe.
- 6.32.3 Designated on-carriageway active travel cycle routes in rural areas should generally follow roads with low traffic flows, preferably below 1,000 vehicles AADT and with traffic speeds no greater than 30mph. In rural areas the design of cycle routes should be sympathetic to the local environment with careful use of signing and road markings.
- 6.32.4 Improving the rural cycle experience can be achieved by adopting and incorporating the various design features which aim to make rural roads safer and more pleasant places to travel by foot and cycle.

Gated Closures/Restrictions

- 6.32.5 Closing or restricting access to minor roads is an effective way of improving rural conditions for walkers and cyclists. This can be achieved using a road closure with cycle gap, or restrictions such as signing traffic away from minor roads and designated cycle routes. These measures will require local engagement and consultation on TROs before implementation. It is important that any restrictions are signed in advance particularly at junctions to avoid unnecessary turning movements.



Changed Priorities - Junction Redesign

- 6.32.6 Where two roads intersect, each with two-way traffic flows less than 1,000vpd, the road with the major cycle flow should be given priority. This can be achieved by relocating give-way markings and signs. Junctions can often be hidden in rural roads by bends and vegetation therefore it is important to consider improving and maintaining visibility splay at junctions.

Reduced speed limits

- 6.32.7 The majority of the rural road network is subject to the national speed limit of 60mph. The geometry of many rural roads does not allow such speeds and where cycling is being encouraged, reduced speed limits along an active travel route should be considered.
- 6.32.8 However, speed limit changes on their own are unlikely to substantially reduce average speeds, therefore appropriate traffic calming measures should be considered especially at approaches to isolated hazards, junctions and bends.

Quiet Lanes

- 6.32.9 Minor rural roads that are appropriate for shared use by walkers, cyclists, horse riders and motorised users may be designated as Quiet Lanes. They should have low traffic flows travelling at low speeds. This is achieved by community engagement and a combination of gateways, traffic signing strategies and restrictions. This concept identifies networks of rural roads rather than individual roads, which means it facilitates in widening transport choices and also helps to protect character and tranquillity in rural areas.
- 6.32.10 Quiet Lanes should be essentially self-enforcing however maintaining public awareness about Quiet Lanes is important and this can be done through local advertising. The Transport Act 2000 contains provisions which give local highway authorities the power to designate certain roads, for which they are responsible as Quiet Lanes, and has given the term 'Quiet Lane' legal status.
- 6.32.11 Section 268 of the Transport Act 2000 covers England and Wales. However, whilst regulations have been made in England, none have yet been made in Wales. Until Welsh regulations are made, local authorities in Wales will not be able to designate roads as quiet lanes.



Centre line removal

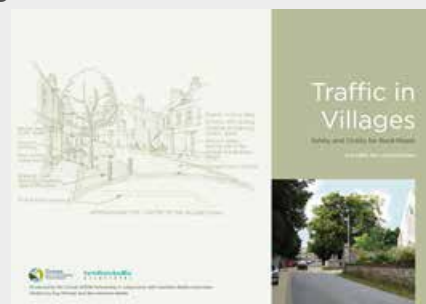
- 6.32.12 Centre lines can increase traffic speeds since they help guide motorists, and give them greater confidence to negotiate oncoming traffic. Consideration can be given to removing centrelines on lightly trafficked rural roads as part of an overall strategy to reduce traffic speeds.
- 6.32.13 Where traffic volumes are high or where HGVs frequently use a route, the introduction of motor traffic restrictions (e.g. signed HGV alternative routes, and/or weight & width restrictions) can reduce traffic volume, helping to create suitable conditions for centre line removal.

Traffic in Villages

It is important that access in and around villages is suitable for active travel modes. Traffic in Villages is a publication produced by Dorset AONB Partnership which provides a toolkit that can be used for successful village design.

The mechanisms in the above publication for creating successful villages will also coincide in helping achieve better cycling conditions and facilities. These include reducing speed limits, creating gateways, improving crossing points, wayfinding measures, public spaces/meeting points, de-cluttering, etc. It is important that these principles do not inadvertently make worse cycle conditions by taking into consideration:

- Designing out existing and avoid creating pinch points (e.g. at gateways)
- Cycle access maintained at closures or restrictions
- Uncomfortable surface materials (e.g. cobbles)
- Retaining and improving upon cycle signing
- Car parking (ensuring echelon and other forms of parking do not create dangerous conditions for cyclists)
- Cycle parking



Gateways

- 6.32.14 Gateways are used at village boundaries to raise driver awareness of an approaching settlement, where traffic speeds are intended to be reduced. These are points where it is necessary to reduce speed limits and physical traffic calming is often used to help enforce this measure. This can sometimes lead to pinch points for cyclists in areas where traffic speeds are still above 30mph.
- 6.32.15 Where pinch points are intended or have already been created, cycle bypasses should be provided see DE007.
- 6.32.16 Gateways do not have to take the form of a pinch point as they can be subtly created by using planting, different road colours/materials and other visual changes that mark the contrast between high speed roads and low speed villages. It should be a place where centre line markings end as this helps highlight a change in road character.

6.33. Transition between Cycle Tracks and On Carriageway Cycling DE034

- 6.33.1 The transition for cyclists between a cycle track (including a shared use path) and the carriageway needs to be safe and comfortable. Cyclists should be able to continue on their path, crossing a flush kerb at right angles, without having to turn sideways and give way to vehicles on the carriageway. The design of the transition point must ensure that cyclists are clearly visible so that motorists are aware that cyclists are likely to be re-joining the carriageway ahead of them.

Photo 6.15 – Transition between Cycle Track and Cycle Lane, Liverpool





- 6.33.2 Transitions in the opposite direction – between a cycle lane and a cycle track – usually present fewer safety problems for cyclists, but should still allow cyclists to continue in a direct line, crossing a flush kerb at right angles.

Flush Kerbs

- 6.33.3 The ability to move between cycle track and the carriageway, whether as part of a crossing manoeuvre or for cyclists joining or leaving the carriageway, is greatly helped by the type and quality of construction of the kerbs. This is particularly important if the kerb is to be crossed at a shallow angle, although designs should aim to modify kerb lines so that cyclists cross them at 90 degrees. Photo 6.17 shows an example of a flush kerb.

Photo 6.17 – Flush Kerb



DE003 Ramp

Measure and Brief Description

Ramps (defined as a gradient of more than 5 % (1 in 20)) are provided to facilitate a change in level or grade on a walking route. They should only be used where a change in level or grade cannot be avoided. In many places ramps will provide the alternative access to stairs for wheelchair users.

Benefits

- Ramps provide an accessible alternative to steps for disabled people, older people and parents and carers with pushchairs.

Key Design Features

- Where the change in level is no more than 200mm a ramp may be used without alternative steps.
- Desirable Maximum Gradient – 5% (1 in 20).
- Absolute Maximum Gradient – 8% (1 in 12). Steeper ramps will cause difficulties for manual wheelchair users.
- Absolute Maximum Gradient over short distances (max 1m) - 10% (1 in 10) - eg on a ramp between a bus entrance and the pavement.

Dimensions

- Ramp surface width
 - » Preferred Minimum – 2m
 - » Desirable Minimum – 1.8m
 - » Absolute Minimum – 1.2m
- Sides of a ramp should be protected by a raised solid kerb at least 100mm in height.
- If kerb height exceeds 75mm there must be no slot or gap greater than 20mm in the range of 75mm to 150mm. This is done to avoid the possibility of the footplate of a wheelchair riding over the kerb or becoming trapped.
- Ramp-side face of the kerb to be flush with, or no more than 100mm away from, the ramp-side face of the handrail.
- Handrails should be provided on each side, with a minimum clear width rail to rail of 1,000mm. Where this unobstructed width exceeds 2000mm, a central, continuous handrail may be used as an alternative to a handrail on each side.
- Handrails should be provided on both sides of stairways and ramps and down the centre of stairs when their unobstructed width (ie between handrails) exceeds 1,800mm.
- Recommended height to the top of the principal handrail is between 900mm and 1000mm above the pitchline of the steps or above the surface of the ramp. On landings the top of the handrail should be between 900mm and 1100mm from the surface.
- Handrails should continue beyond the end of the ramp slope or end of the stairs by a (minimum) distance of 300mm and should either return to the wall or down to the floor or have a minimum rounded downturn of 100mm.
- Second, lower handrails for children and people of restricted growth are helpful and should be at heights of between 550mm and 650mm.
- The handrail itself should be smooth and comfortable to use by people with arthritic hands that is they should not be too small in diameter. Circular handrails should have a diameter between 40mm and 50mm; if not circular the handrail should be a maximum of 50mm wide by 38mm deep with rounded edges (radius of at least 15mm).
- There should be a clear space between the handrail and any adjacent wall of at least 50mm, preferably 60mm. Handrails should be supported centrally on the underside so there is no obstruction to the passage of the hand along the rail. There should also be a minimum of 600mm clear space above the handrail.

Other Considerations

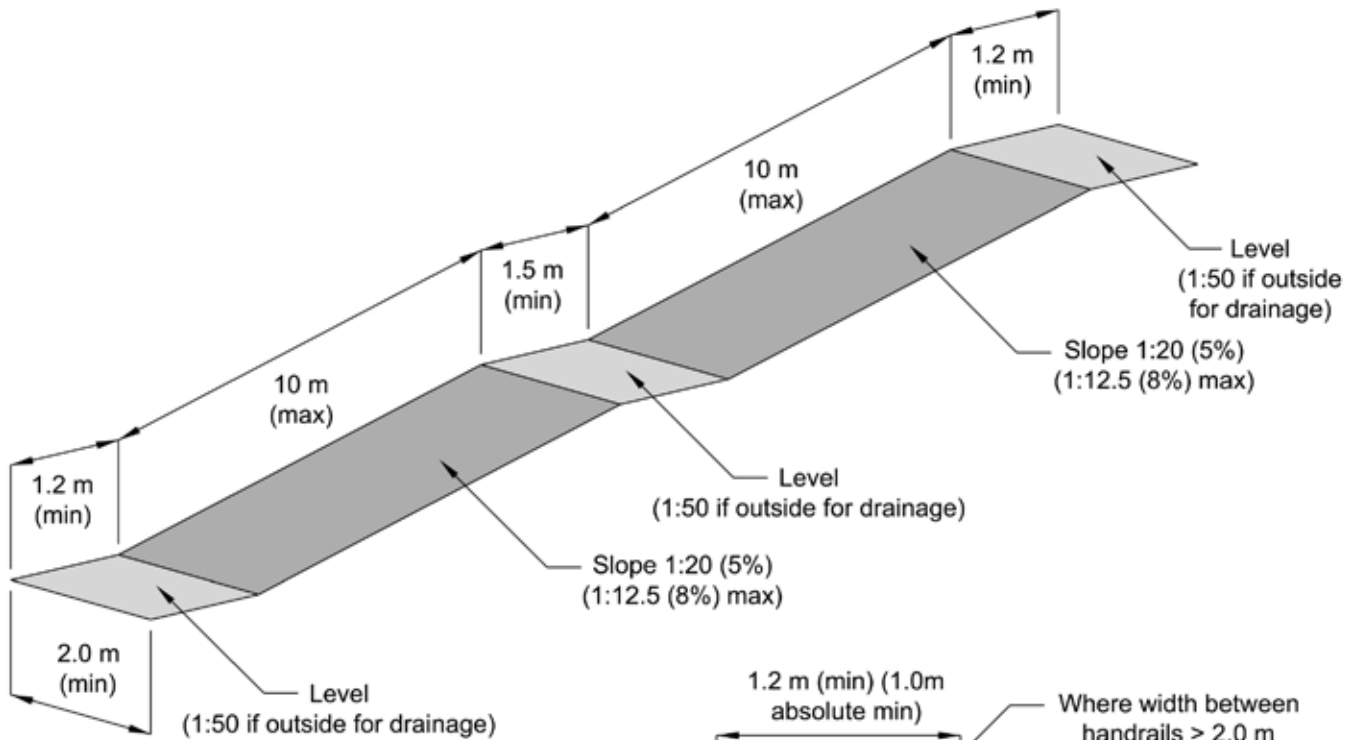
- There is a relationship between the length of a ramp and the gradient that people can manage; the longer the ramp the less severe the gradient that is feasible. One possible approach to this is, where a lengthy ramp is necessary, to design more frequent landings and lesser slopes for each successive segment.
- Ramps should never be longer than 132 metres in total and preferably no longer than 50 metres.
- Means should be provided to limit the risk of people colliding with the underside of freestanding ramps at any point where the clear height is less than 2.1m.
- The transition between the level and inclined parts of the ramp should be sufficiently rounded to ensure that a wheelchair user does not get caught by the foot supports.

Further References

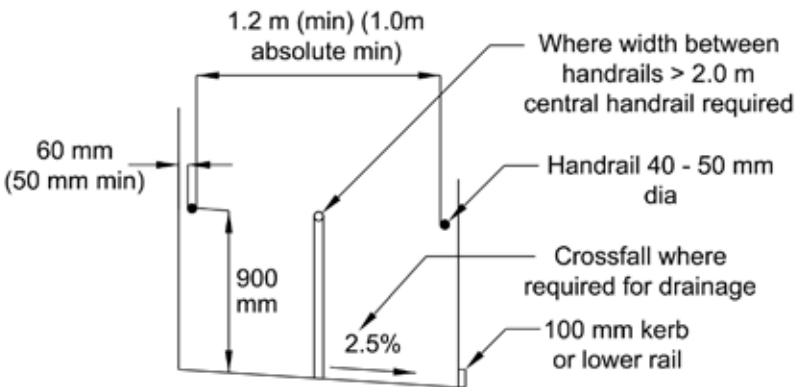
- Department for Transport (2005) – Inclusive Mobility.

DE003

Ramps



Ramp key dimensions



Section through ramp



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DE013 Mandatory Cycle Lane

Measure and Brief Description

Mandatory cycle lanes define an area of the carriageway that is reserved for cyclists and are suitable for roads where the speed limit is 30mph or less. Mandatory lanes are marked with a continuous white line (Diagram 1049) which prohibits vehicles from entering the lane during the hours of operation, which should normally be at all times. There can be exceptions, such as emergency service vehicles and access to private driveways. Parking and loading should also be prohibited through appropriate controls. Mandatory lanes are preferable to advisory lanes and should be used unless there are particular local circumstances preventing their use. Following the coming into force of the revised TSRGD in March 2015, it is anticipated that mandatory cycle lanes will not require Traffic Regulation Orders to be made, but until then TROs are necessary.

Benefits

- For exclusive use by cyclists during hours of operation (normally at all times).
- Delineated by solid white line, which is less likely to be crossed by motor vehicles.
- Can be enforced by the Police.
- Reduces the potential for conflict between motor vehicles and cycles compared to an advisory lane.
- Highlights presence of cyclists.
- Reduced lane width for motor traffic likely to reduce traffic speeds.

Key Design Features

- Continuity of cycle lane essential.
- Solid white delineation line 150mm wide (Diagram 1049).
- Cycle symbol markings (diagram 1057) should be placed at the start of the lane and after every break, as well as at regular intervals on long uninterrupted lengths.
- TRO required (Note – it is expected that this requirement will be removed in the revised TSRGD, which is planned for 2015).
- Lanes should operate at all times.
- Waiting and loading restrictions should apply at all times.

Dimensions

- a - Desirable minimum 2m, Absolute minimum 1.5m.
- Cycle lane entry taper 1:10, exit taper 1:5.

Other Considerations

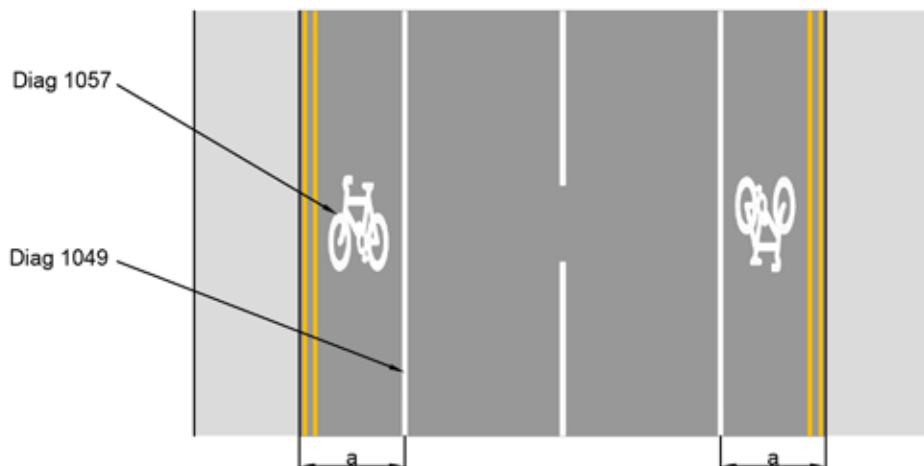
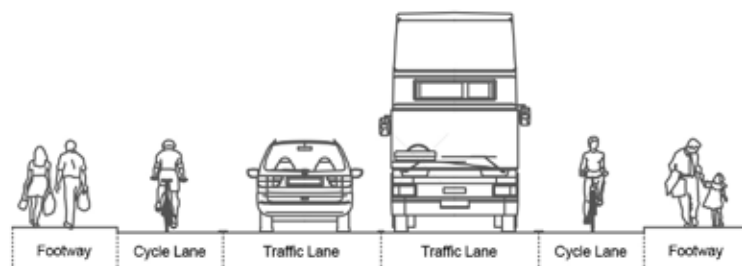
- Mandatory lanes must be discontinued at side road junctions but the use of a short length marking to diagram 1010* preserves continuity.
- Mandatory lanes can be continued across private accesses.
- Additional protection of cycle lanes can be provided using hatched road markings and traffic islands.
- A cyclist riding in the 'secondary' position will fill a 1.5m cycle lane, so if this width cannot be provided a cycle lane is unlikely to be appropriate.
- Inadequate cycle lane widths may increase conflict risk because drivers do not realise that cyclists need to move away from the kerb to avoid surface hazards. A narrow cycle lane may also give motorists (misplaced) confidence to provide less clearance while overtaking than they would in the absence of a cycle lane.
- Greater width should be considered on uphill cycle lanes to allow for additional lateral movement.
- A single uphill cycle lane is preferable to two sub-standard lanes.
- Cycle lanes constrain cyclists to the margin of the carriageway and so cycle-friendly gully gratings are essential.
- Authorities may choose to only place vertical signs to diagram 959.1 with each diagram 1057 marking where there is a clear need to alert other road users to the presence of the mandatory lane.*

Further References

- Department for Transport (2003) – Traffic Signs Manual Volume 3. Road Markings.

DE013

Mandatory Cycle Lane



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DE014 Advisory Cycle Lane

Measure and Brief Description

Advisory cycle lanes define an area of the carriageway that is intended for cyclists and are suitable for roads where the speed limit is 30mph or less. Advisory lanes are marked with a broken white line (Diagram 1004) which indicates that other vehicles should not enter unless it is safe to do so. Advisory lanes are less preferable than mandatory lanes, which should be used unless there are particular local circumstances.

Benefits

- Can be used in circumstances where a carriageway is not wide enough to permit full width mandatory cycle lanes, resulting in occasional motor vehicles entering the cycle lane.
- Can be useful to indicate routes through a large or complex junction.
- Reduces the potential for conflict between motor vehicle and cycles.
- Highlights presence of cyclists.
- Reduced lane width for motor traffic likely to reduce traffic speeds.

Key Design Features

- Continuity of cycle lane essential.
- Bounded by broken white line 100mm wide (diagram 1004).
- Cycle symbol markings (diagram 1057) should be placed at the start of the lane and after every break, as well as at regular intervals on long uninterrupted lengths.
- TRO not required for advisory cycle lane.
- Waiting and loading restrictions should apply at all times.

Dimensions

- a - Desirable minimum 2m, Absolute minimum 1.5m.
- Cycle lane entry taper 1:10, exit taper 1:5.

Other Considerations

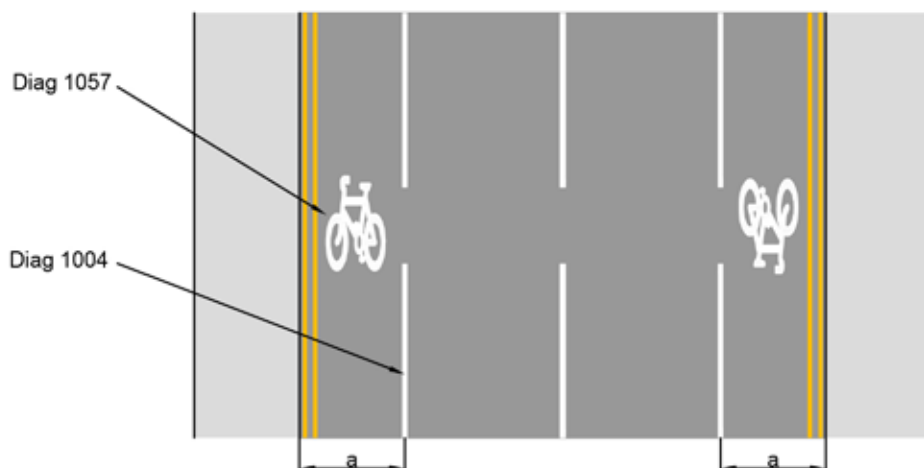
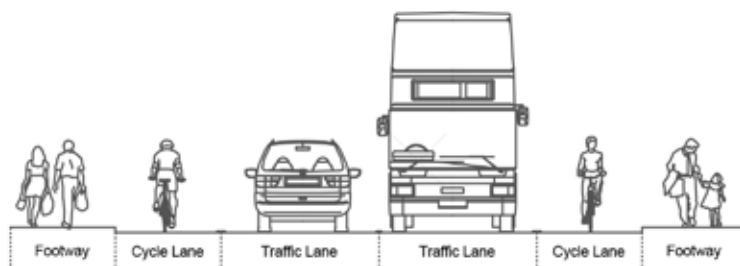
- Where width is constrained, a wider advisory cycle lane may be preferable to a narrow mandatory one.
- There can be benefits in continuing advisory cycle lanes through signalled junctions.
- Additional protection of cycle lanes can be provided using hatched road markings and traffic islands.
- A cyclist riding in the 'secondary' position will fill a 1.5m cycle lane, so if this width cannot be provided a cycle lane is unlikely to be appropriate.
- Inadequate cycle lane widths may increase conflict risk because drivers do not realise that cyclists need to move away from the kerb to avoid surface hazards. A narrow cycle lane may also give motorists (misplaced) confidence to provide less clearance while overtaking than they would in the absence of a cycle lane.
- Greater width should be considered on uphill cycle lanes to allow for additional lateral movement.
- A single uphill cycle lane is preferable to two sub-standard lanes.
- Cycle lanes constrain cyclists to the margin of the carriageway and so cycle-friendly gully gratings are essential.
- Authorities may choose to only place vertical signs to diagram 967 with each diagram 1057 marking where there is a clear need to alter other road users to the presence of the mandatory lane.*

Further References

- Department for Transport (2003) – Traffic Signs Manual Volume 3. Road Markings.

DE014

Advisory Cycle Lane



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DE017 Cycle Lanes with Removal of Centrelines

Measure and Brief Description

Consideration can be given to the removal of centrelines where carriageway widths do not permit the introduction of cycle lanes of adequate width whilst retaining two general traffic lanes. In addition to increasing the width available for cyclists, the technique also has a speed reducing effect as motor traffic no longer has defined lanes in each direction. Where the need arises for on-coming motor vehicles to pass each other on a narrow carriageway, this is achieved by both drivers momentarily pulling over into their respective near-side advisory cycle lanes, having first checked to see they are clear of cyclists.

Benefits

- Creates sufficient width for cycle lanes of the appropriate standard.
- Creates a safer and more comfortable environment than sub-standard cycle lanes.
- Achieves speed reduction for motor vehicles.
- Cost-effective, may be facilitated through maintenance works.
- Can be politically more acceptable than other more physical, traffic calming techniques.

Key Design Features

- Not suitable for roads with high traffic and HGV flows.
- A max of 10,000 vehicles AADT is recommended, although schemes have been introduced with traffic volumes of up to 14,000 vehicles AADT.
- Not suitable for roads with speed limits over 30mph.
- Unless only light vehicles are present, advisory cycle lanes should be used so that large vehicles can use the cycle lanes to pass one another.
- Requires adequate forward visibility.

Dimensions

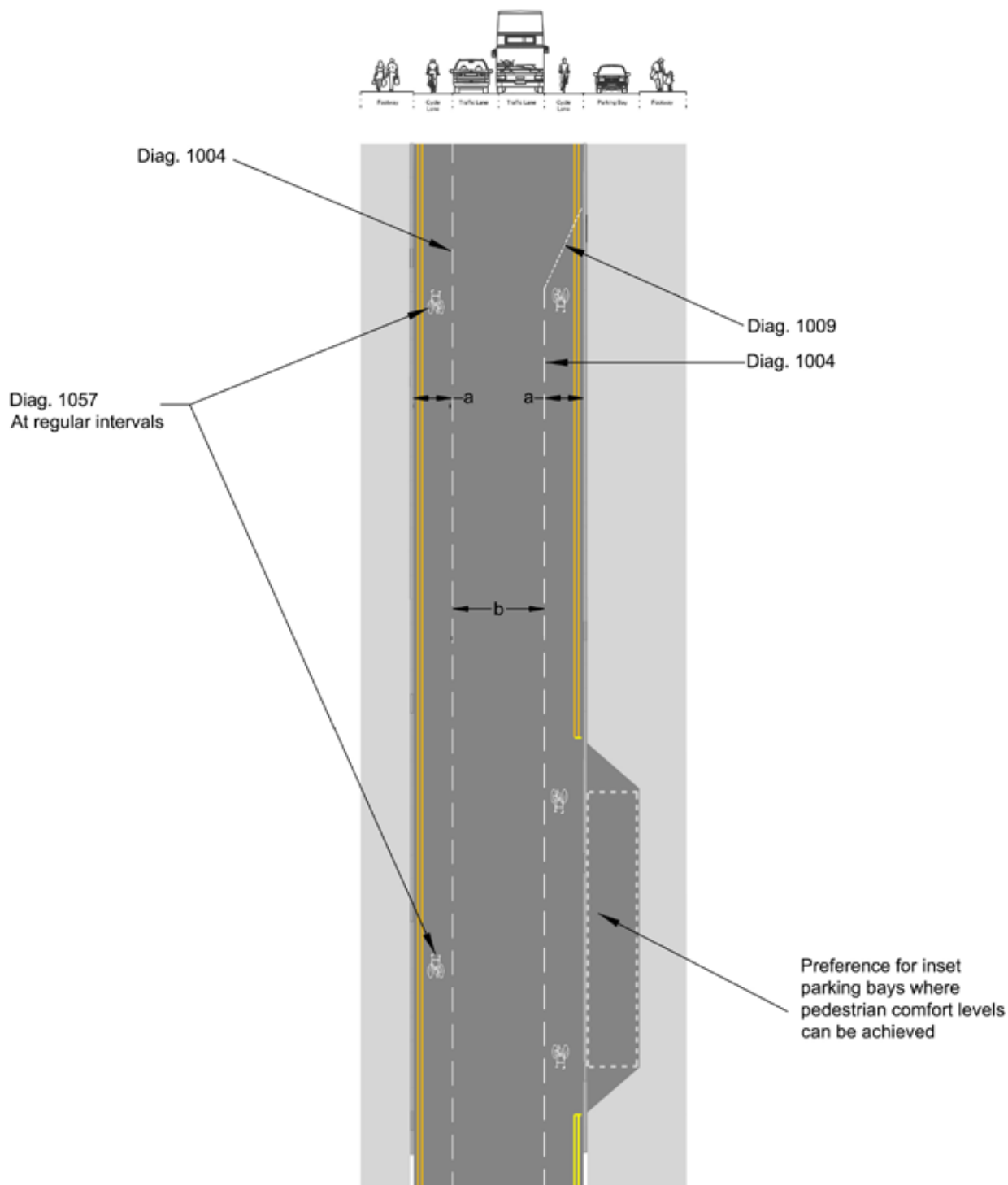
- a - Desirable minimum 2m, Absolute minimum 1.5m.
- b - central general traffic lane 3m to 5.5m wide, preferably 4.1m – 4.8m.
- Where kerb-side parking is present, provide a buffer strip of 0.5 - 1m, or use inset parking bays.

Other Considerations

- If the general traffic lanes are wider than 5.5m in total, the additional space should be used to increase the width of cycle lanes.

DE017

Cycle Lanes With Removal of Centrelines



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DE018 Cycle Lane with Light Segregation

Measure and Brief Description

The degree of separation provided by a mandatory cycle lane may be reinforced by 'light segregation' from the main carriageway, i.e. intermittent low level physical features such as planters, wands (retroreflective self-righting bollards) or proprietary raised features which may be constructed from rubber, PVC or concrete. The fact that the obstacles are intermittent allows cyclists to manoeuvre between the cycle lane and the carriageway as necessary, avoids any impact on drainage and means that the design is cost effective and flexible.

Benefits

- Increase cyclist comfort and safety levels, as well as subjective safety.
- Can be used on roads with speed limits of up to 30mph.
- Physical features deter motorists from encroaching into lane.
- Cyclists can manoeuvre in and out of the lane to carry out right turns and for access
- Low installation cost.
- Easily installed to existing cycle lanes.
- Lane widths can be easily adapted to suit future conditions, such as increased usage.
- Can also be used for contra-flow lanes and for two way cycling.
- Avoids the need for drainage works.

Key Design Features

- Used in combination with a mandatory cycle lane (diagram 1049).
- Advisory cycle lane (diagram 1004) should not be used, as a key design principle is that motor vehicles should not cross light segregation.
- Physical features should be placed on the left hand side of the cycle lane marking so that the marking can clearly be seen by drivers.
- Careful consideration is needed for the design of the physical feature – they need to be conspicuous and robust, but not mimic a road marking or sign.
- Low features should have curved or sloped faces to minimise the hazard for motor vehicles.
- Continuity should be provided at bus stops.

Dimensions

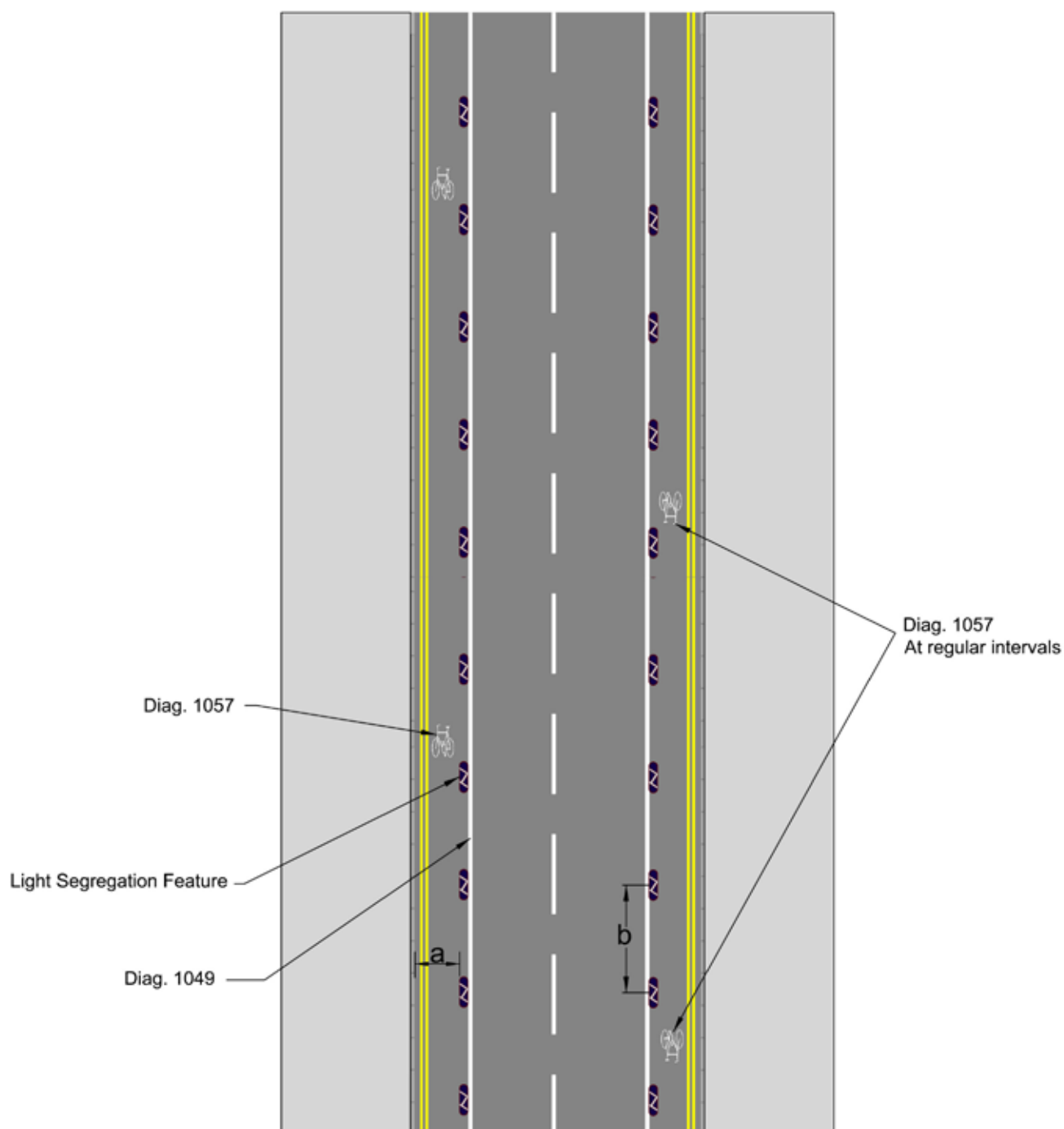
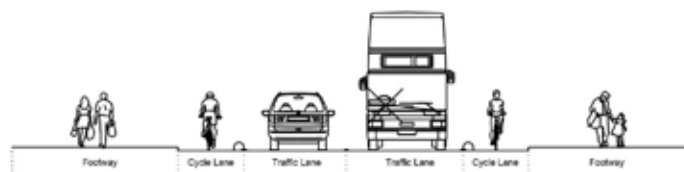
- a - Desirable minimum 2m, Absolute minimum 1.5m.
- Where cycle flows are heavy (over 150 cyclists in the peak hour) and frequent overtaking occurs, widths should be increased to 2.5m.
- b - Segregation features to be spaced at 2.5-10m intervals, or as recommended by the product manufacturer.

Other Considerations

- If using bollards consideration should be given for illumination or reflective strips.

DE018

Cycle Lanes With Light Segregation



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DE021 Hybrid Cycle Track

Measure and Brief Description

Hybrid cycle tracks have a surface raised above the carriageway but are below the level of the footway. They keep cyclists close to other traffic but provide more separation from it than a cycle lane or light segregation does. Cyclists can enter and leave the cycle track relatively easily where lowered kerbs or fillets are provided but the presence of a raised kerb edge along most of the length deters encroachment by motor vehicles.

Benefits

- Increase cyclist comfort and safety levels, as well as subjective safety.
- Can be used on roads with speed limits of up to 30mph.
- Level difference helps deter motorists from straying into cycle lane.
- Priority for cyclists over accesses to properties and side roads is maintained.
- Can reduce the amount of traffic signs and markings compared with mandatory cycle lanes.
- No TRO is required although this would be necessary for parking restrictions.
- Can reduce conflict between cyclists and pedestrians compared with shared use paths.

Key Design Features

- Hybrid cycle tracks operate one way, in the same direction as motor traffic flow.
- Space can be taken from footway or preferably carriageway to create the track.
- Lowered to merge with the carriageway at junctions or other areas where cyclists need to access the general traffic lanes.
- Continuity should be provided at bus stops.
- Hybrid tracks at side roads retain priority for cyclists.

Dimensions

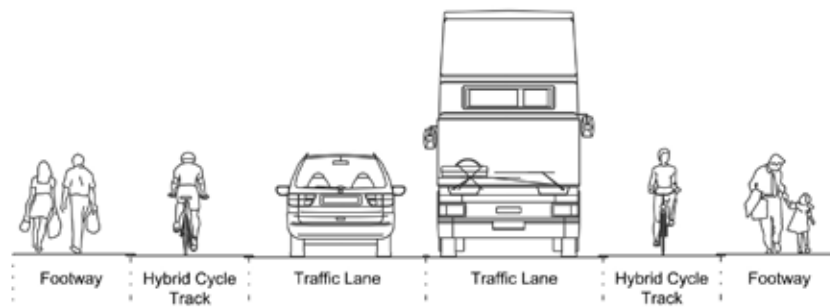
- a - Desirable minimum 2m, Absolute minimum 1.5m.
- Where cycle flows are heavy (over 150 cyclists in the peak hour) and frequent overtaking occurs, widths should be increased to 2.5m.
- Minimum kerb upstands should generally be 50mm on the carriageway side, and 25mm on the footway side.
- Lamp columns, sign posts, etc should be placed 0.5m from any hybrid cycle lane.

Other Considerations

- New drainage facilities will need to be introduced into the narrowed carriageway while existing grates will need to be raised to cycle track level. Cycle friendly drainage grates should be used for both.
- Can be used as part of centreline removal projects.
- There is no particular requirement to sign hybrid tracks (or use coloured surfacing). In many cases, the kerb upstand itself will suffice to deter motor vehicles from entering. However, the use of a mandatory lane placed on the carriageway side of the kerb could be considered if encroachment by motor vehicles (including parking) becomes a problem.

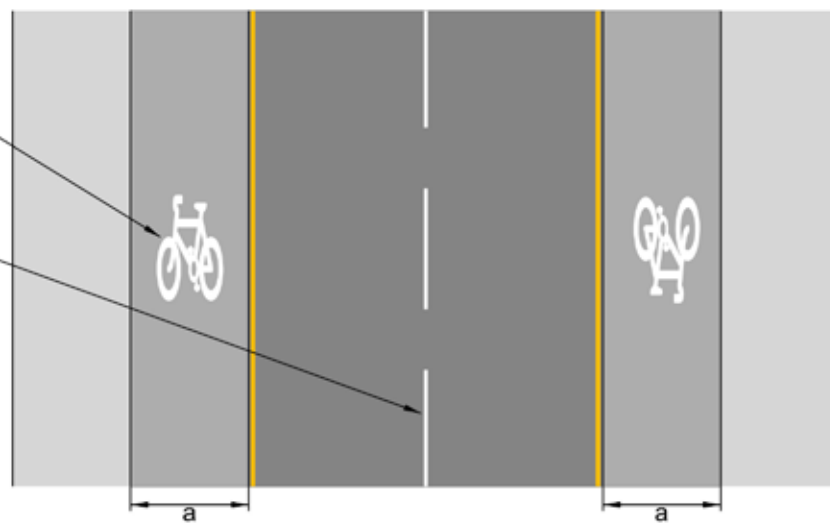
DE021

Hybrid Cycle Track



Diag 1057

Diag 1004



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DE023 Cycle Track Alongside Road, Separated From Pedestrians

Measure and Brief Description

Where traffic volumes and/or speeds are too high for cycle lanes, light segregation or hybrid tracks, physical separation from motor traffic may be appropriate to provide cyclists with safe and comfortable space, through the provision of segregated cycle tracks. Segregated cycle tracks should be of adequate width, comfortable, continuous and link into surrounding cycling routes. Preferably they will be provided through reallocation of road space from the carriageway; in most urban locations the conversion of footways to segregated shared use should be the last resort. Physical segregation from pedestrians is generally preferred provided widths are adequate and this can be achieved through a level difference or verge. Barriers between cycle tracks and footways are not desirable since they limit the effective width of the paths and are a particular hazard to cyclists. Segregation using only simple white lines (Diag 1049) (which are not detectable by blind users) or a raised white line delineator (Diag 1049.1), is an option but it is rarely respected by pedestrians (who have the legal right to use the cycle track) in practice, unless cycle flows are high or there is generous width, and should therefore be avoided.

Benefits

- Provides routes which are free from conflict with motor traffic.
- Segregated paths allow each group to move at their own desired pace and improve comfort and subjective safety.

Key Design Features

- The cycle track should normally be located between carriageway and footway.
- Footways and cycle tracks should be continuous across private accesses.
- Pedestrians require regular crossing points with flush kerbs between the cycle track and the carriageway; tactile paving should be provided.
- Cycle tracks should not deflect more than 45° and changes in height should be avoided.
- Machine-laid black bituminous surfacing should be used as it will make cycle journeys safer, more comfortable and helps distinguish cycle tracks from adjacent footways surfaced by pavements or slabs.
- Lamp columns and other street furniture should not be placed in cycle tracks.
- Centre lines should be marked on two-way cycle tracks.

Dimensions

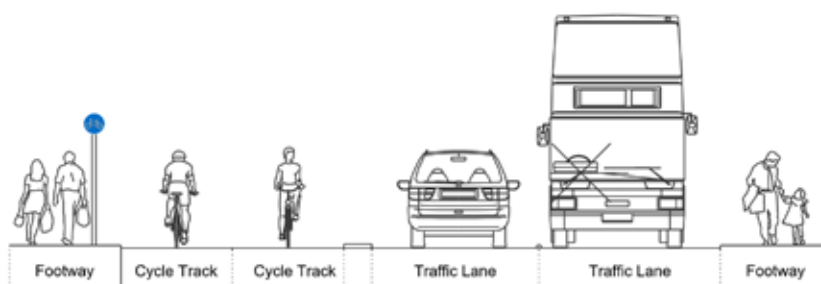
- a - Cycle track width should be sufficient to accommodate the forecast level of use with a minimum of:
 - » Absolute minimum 2.5m, where the peak hour cycle flow is less than 50/hr;
 - » Desirable minimum 3m, where it is 50-150/hr, 4m for cycle flows over 150/hr.
- Cycle tracks should include additional width where they are bounded by vertical features. Additional width required is:
 - » Kerb up to 150mm high: add 200mm.
 - » Vertical feature 150-600mm high: add 250mm.
 - » Vertical feature above 600mm high: add 500mm.
- b - In addition to the path width above, a margin strip separating the cycle track from the carriageway is recommended:
 - » Desirable minimum 0.5m with speed limits of 30mph
 - » Desirable minimum 1.5m with speeds limits of 40mph or above.
- c - The width of the footway should reflect the level and type of use, based on level of service, Desirable minimum 2m width, increasing to 3.5m width where there is frequent use by groups. 1.5m may be acceptable over short lengths – see DE001.
- Verges separating pedestrian and cycle routes should be a minimum of 1m wide.

Other Considerations

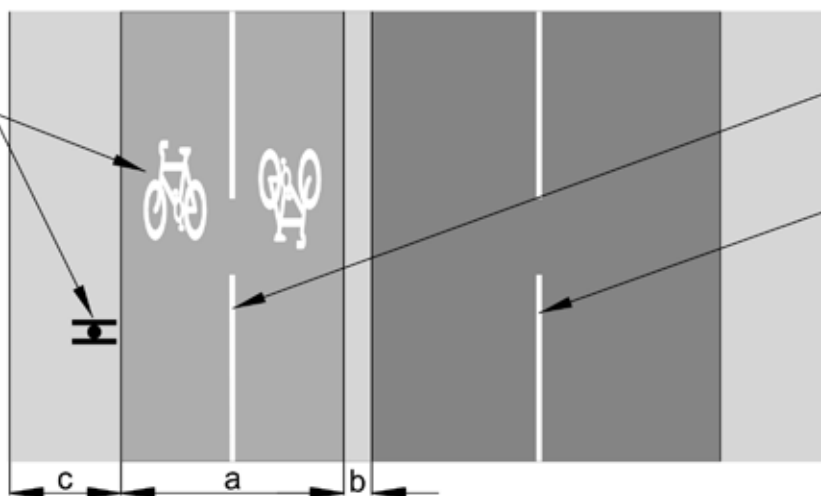
- Generally cycle tracks alongside the carriageway will either be two-way, usually on one side of the road, or one-way on both sides of the road. Historically most cycle tracks in the UK have been built as two-way, but this can present safety problems at junctions.
- Care needs to be taken where a cycle track passes private accesses, to ensure drivers emerging from the access can see cyclists.
- Two way tracks are therefore best suited to routes that have few side road junctions and accesses.
- Use of white lining to provide a buffer between the cycle track and carriageway is not recommended in unlit areas, as this could be misinterpreted as marking the edge of carriageway by passing motorists, who are then at risk of striking the kerb and losing control.
- Upright signs to indicate cycle track should preferably be located in the verge or footway.

DE023

Cycle Track Alongside Road, Separated From Pedestrians



Diag 955 mounted back to back and Diag 1057 to be located at start of cycle track, after each break and at intervals along the route



Diag 1004
(to be omitted if cycle track < 3.0m)

Diag 1004



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DE024 Cycle Track Alongside Road, Shared With Pedestrians

Measure and Brief Description

Where traffic volumes and/or speeds are too high for cycle lanes, light segregation or hybrid tracks, physical separation from motor traffic may be appropriate to provide cyclists with safe and comfortable space. Where a cycle track will be shared with pedestrians, sufficient width must be provided for the two user groups to interact safely and in comfort. It is essential that developing the design of an unsegregated shared use track includes early consultation with relevant interested parties such as those representing people with disabilities, pedestrians and cyclists. Preferably they will be provided through reallocation of road space from the carriageway; in most urban locations the conversion of footways to unsegregated shared use should be the last resort.

Key Design Features

- Shared cycle tracks should be continuous across private accesses.
- Pedestrians require regular crossing points with flush kerbs; tactile paving should be provided.
- Cycle tracks should not deflect more than 45° and changes in height should be avoided.
- Machine-laid bituminous surfacing should be used as it will make cycle journeys safer, more comfortable and helps distinguish shared cycle tracks from nearby footways surfaced by pavements or slabs.
- Lamp columns and other street furniture should not be placed in cycle tracks.

Dimensions

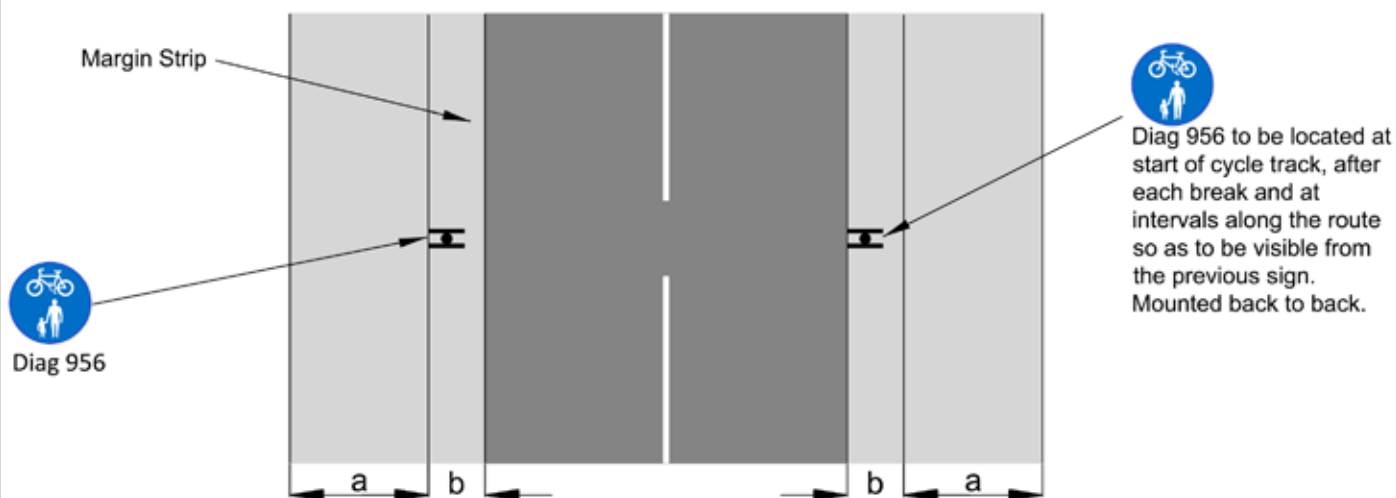
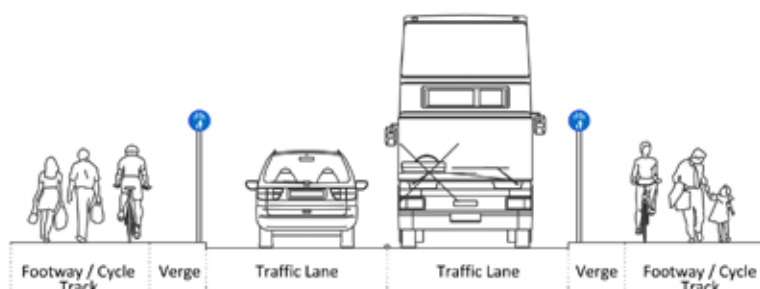
- a - width should reflect the level and type of use forecast with a minimum of 3m width on primary cycle routes, or 2.5m on less busy secondary routes. On particularly heavily trafficked routes it should be increased to 4m.
- Unsegregated cycle tracks should include additional width where they are bounded by vertical features. Additional width required is:
 - Kerb up to 150mm high: add 200mm;
 - Vertical feature 150-600mm high: add 250mm;
 - Vertical feature above 600mm high: add 500mm.
- b - In addition to the path width above, a margin strip separating the cycle track from the carriageway is recommended:
 - Desirable minimum 0.5m with speed limits of 30mph;
 - Desirable minimum 1.5m with speed limits of 40mph or above.

Other Considerations

- Generally cycle tracks alongside the carriageway will either be two-way, usually on one side of the road, or one-way on both sides of the road. Historically most cycle tracks in the UK have been built as two-way, but this can present safety problems at junctions.
- Care needs to be taken where a cycle track passes private accesses, to ensure drivers emerging from the access can see cyclists.
- Two way tracks are therefore best suited to routes that have few side road junctions and accesses.
- Use of white lining to provide a buffer is not recommended in unlit areas, as this could be misinterpreted as marking the edge of carriageway by passing motorists, who are then at risk of striking the kerb and losing control.
- Upright signs to indicate cycle track should preferably be located in any verge between the cycle track and the carriageway.

DE024

Cycle Track Alongside Road, Shared With Pedestrians



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DE025 Cycle Track at Side Road with Cycle Priority

Measure and Brief Description

Uncontrolled cycle track crossings at side roads should, wherever safe and practicable, give priority to cyclists crossing the side road. Such crossings will allow cyclists to continue without loss of momentum and present a strong promotional message about how non-motorised users are valued along a corridor. Factors to be considered when determining who has priority include: location, motor vehicle speed and volume, visibility, number of pedestrian and cycle movements and collision records.

Benefits

- Improved continuity and reduced effort for cyclists.
- Raised status for pedestrian and cyclists.
- Reduced vehicle speeds on side roads entering junction.

Key Design Features

- Side roads and accesses where vehicle speeds are less than 30mph and volume is less than 2,000 vpd will normally be suitable for cycle priority crossings.
- When cycle tracks are two way, drivers waiting to turn right into a side road may not anticipate cycles approaching from behind. Similarly drivers emerging from the side road may not anticipate cycles approaching from the left. One way cycle tracks which operate in the same direction as general traffic are therefore preferred.
- Cycle priority crossings should be located on a raised table.
- The corner radii and carriageway width of the side road should be minimised.
- Cycle track should not turn through more than 45 degrees on approaches.
- There needs to be good levels of inter-visibility between pedestrians, cyclists and motorists.

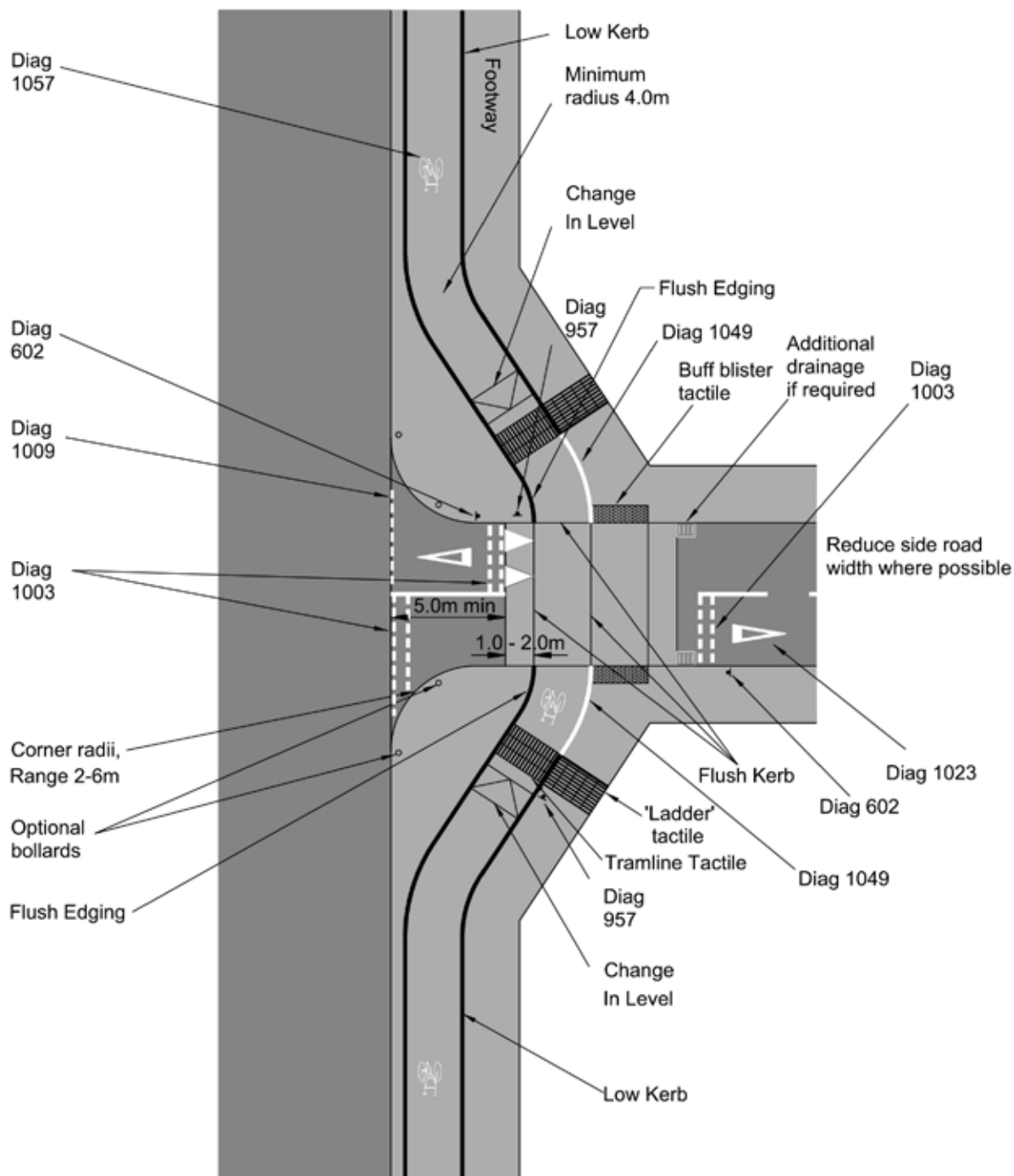
Dimensions

- Cycle priority crossings should normally be 'bent out', i.e. set back 5m from the junction channel line to enable a car to stop clear of the main carriageway. However, there are examples of schemes where the cycle track has been built closer to the junction which have operated satisfactorily.
- This option can be considered where there is only light traffic using the side road and speeds on the main road are no greater than 30mph.

Other Considerations

- Consider highlighting the crossing with coloured surfacing.
- Cycle track crossings can be difficult places for younger or inexperienced cyclists to negotiate, as they need to ensure that they are aware of vehicles on both the main carriageway and the side roads and judge speeds and turning movements. Simple design and clear signing is therefore important.

DE025





Road Layout
Design

CD 195

Designing for cycle traffic

(formerly IAN 195/16)

Revision 1

Summary

This document contains the requirements for cycle traffic on the trunk road and motorway network.

Application by Overseeing Organisations

Any specific requirements for Overseeing Organisations alternative or supplementary to those given in this document are given in National Application Annexes to this document.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Highways England team. The email address for all enquiries and feedback is: Standards_Enquiries@highwaysengland.co.uk

This is a controlled document.

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Release notes

Version	Date	Details of amendments
1	Mar 2020	Revision 1 (March 2020) Update to references in England NAA only. Revision 0 (September 2019) CD 195 replaces IAN 195/16. This full document has been re-written to make it compliant with the new Highways England drafting rules.

Foreword

Publishing information

This document is published by Highways England.

This document supersedes IAN 195/16 Cycle traffic and the strategic road network, which is withdrawn.

Contractual and legal considerations

This document forms part of the works specification. It does not purport to include all the necessary provisions of a contract. Users are responsible for applying all appropriate documents applicable to their contract.

Introduction

Background

This document provides requirements and advice relevant to the motorway and trunk road network for the design of infrastructure for cycle traffic. It is intended to be used by highway design professionals to facilitate the convenient and safe movement of cycle traffic, where cycling is legally permitted.

Assumptions made in the preparation of this document

The assumptions made in GG 101 [Ref 1.N] apply to the document.

1. Scope

Aspects covered

- 1.1 This document shall be used for the design of routes and assets used by cycle traffic.

NOTE This document does not cover the design of shared use facilities for pedestrians, equestrians and cyclists.

- 1.2 The national requirements for designing for cycle traffic set out in the National Application Annexes shall be followed.

Implementation

- 1.3 This document shall be implemented forthwith on all schemes involving cycle traffic on the Overseeing Organisations' motorway and all-purpose trunk roads according to the implementation requirements of GG 101 [Ref 1.N].

- 1.4 Desirable minimum values presented in this document shall be used as default values.

- 1.5 Absolute minimum values shall only be used where there are existing physical constraints preventing the use of desirable minimum values on existing roads where a cycle route is proposed or an existing cycle route is to be improved.

Use of GG 101

- 1.6 The requirements contained in GG 101 [Ref 1.N] shall be followed in respect of activities covered by this document.

2. Normative references

The following documents, in whole or in part, are normative references for this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Ref 1.N	Highways England. GG 101, 'Introduction to the Design Manual for Roads and Bridges'
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Road Layout
Design

CD 195

England National Application Annex to CD 195 Designing for cycle traffic

(formerly IAN 195/16)

Revision 1

Summary

This National Application Annex sets out the Highways England specific requirements for cycle traffic on the trunk road and motorway network.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Highways England team. The email address for all enquiries and feedback is: Standards_Enquiries@highwaysengland.co.uk

This is a controlled document.

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Release notes

Version	Date	Details of amendments
1	Mar 2020	Revision 1 (March 2020) Revision to update references only. Revision 0 (September 2019) Highways England National Application Annex to CD 195.

Foreword

Publishing information

This document is published by Highways England.

This document supersedes IAN 195/16 Cycle traffic and the strategic road network which is withdrawn.

Contractual and legal considerations

This document forms part of the works specification. It does not purport to include all the necessary provisions of a contract. Users are responsible for applying all appropriate documents applicable to their contract.

Introduction

Background

This National Application Annex gives the Highways England-specific requirements for cycle traffic on the trunk road and motorway network.

A Highways England e-learning tool provides additional interactive information to help designers provide appropriate cycle routes.

The Highways England e-learning tool can be found here: <https://cycletraffic-elearning.com> CT-elearning [Ref 1.]

This document refers to the provision for cycle traffic only which allows for a higher design speed when separated from pedestrian and equestrian traffic.

Requirements and advice for shared routes are provided in CD 143 [Ref 3.N].

Assumptions made in the preparation of this document

The assumptions made in GG 101 [Ref 7.N] apply to this document.

Abbreviations

Abbreviations

Abbreviation	Definition
AADT	Annual Average Daily Traffic
DfT	Department for Transport
SSD	Stopping Sight Distance

Terms and definitions

Terms

Term	Definition
Absolute minimum	The design parameter(s) that can be used where there is an existing physical constraint on existing roads where a cycle route is proposed or an existing cycle route is to be improved within the highway boundary.
Advisory cycle lane	A cycle lane bounded by a broken white line which enables motor traffic to enter the lane when legal to do so.
Cycle	As defined by the Road Traffic Act 1988 Road Traffic Act 1988 [Ref 8.N] (Section 192) [3]. NOTE: Types of cycle include: 1) standard cycles; 2) solo tricycles; 3) hand-cranked cycles; 4) tandem cycles; 5) recumbent cycles; 6) trailer cycles (tandems with a hinge, usually with the rear seat to carry a child); 7) cycles towing trailers; 8) cargo cycles; and 9) cargo tricycles.
Cycle design vehicle	A composite of the many types of cycle defined above, used to provide design criteria.
Cycle lane	A lane in the carriageway for use by cyclists.
Cycle network	A set of connected cycle routes that can be legally used by cycle traffic.
Cycle route	Any infrastructure that can be legally used by cycle traffic, including cycle tracks, stepped cycle tracks, cycle lanes, light segregated cycle lanes and carriageways.
Cycle route transition	A smooth and gradual feature where a cycle track joins, or a cycle lane leaves, the carriageway.
Cycle track	A track separate from the main carriageway for use by cyclists. NOTE: Cycle tracks can be newly constructed or created through conversion of a footway (using powers under the Highways Act 1980 Highways Act 1980 [Ref 6.N] [4]) or footpath (using the Cycles Traffic Act CTA [Ref 1.N] [5]).
Cycle traffic	A specific type of traffic on the network where the vehicles meet the definition of a cycle.
Desirable minimum	Design parameters that apply where the conditions for use of absolute minimum value criteria are not applicable.

Terms (continued)

Term	Definition
Green wave	Coordination of a series of traffic lights to allow continuous traffic flow over several junctions in one direction.
Light segregated cycle lane	A mandatory cycle lane that is separated from the carriageway by intermittent physical objects.
Mandatory cycle lane	A cycle lane bounded by a solid white line which excludes motor traffic.
Off-carriageway cycle route	A cycle route segregated from motor traffic and provided off the carriageway. NOTE: This includes cycle tracks.
On-carriageway cycle route	A cycle route provided on the carriageway. NOTE: This includes cycle lanes, light segregated cycle lanes and quiet streets.
Quiet street	A cycle route on low speed and low traffic volume roads where cycle traffic is combined with motor traffic. NOTE: A maximum motor traffic volume of 2500 vehicles per day and a speed limit of 20mph applies to quiet streets.
Shared use facility	A combined facility for use by pedestrians and cyclists.
Stepped cycle track	A one-way cycle track that is constructed at an intermediate height between the carriageway and the verge or footway.
Wheeling ramp	A feature which enables cyclists to go up or down steps without carrying their cycle.

E/1. Types of cycle route

E/1.1 Table E/1.1 shows the minimum cycle route provision which shall be used for different traffic speeds and volumes.

Table E/1.1 Minimum provision for cycle routes

Speed limit (mph)	Motor traffic flow (AADT-Average annual daily traffic)	Minimum provision for cycle routes
40 and over	All flows	Cycle tracks (excluding stepped cycle tracks)
30	>5,000	Cycle tracks
	0-5,000	Cycle lanes
20	>5000	Cycle tracks
	2,500-5,000	Cycle lanes
	<2500	Quiet streets

E/1.1.1 The design should achieve the best balance of the five design criteria set out in Table E/1.1.1.

Table E/1.1.1 Cycling design criteria

Coherence	Cycle networks link trip origins and destinations, including public transport access points and are continuous and easy to navigate.
Directness	Cycle networks serve all the main destinations and seek to offer an advantage in terms of distance and journey time.
Comfort	Infrastructure meets design standards for alignment and surface quality, and caters for all types of user, including children and disabled people.
Attractiveness	Aesthetics, noise reduction and integration with surrounding areas are important.
Safety	Cycle networks not only improve cyclists' and other road users' safety, but also their feeling of how safe the environment is (their personal security).

NOTE The following design characteristics can improve the personal security of users on cycle routes:

- 1) cycle routes within the view of passing people and passing traffic;
- 2) lighting;
- 3) underbridges that provide cross-sections wider than the specified values with flared wing-walls, good lighting and good sight lines;
- 4) vegetation that is a low growing variety (up to 0.8m) on underbridge approaches and adjacent to entries.

E/2. Cycle design vehicle

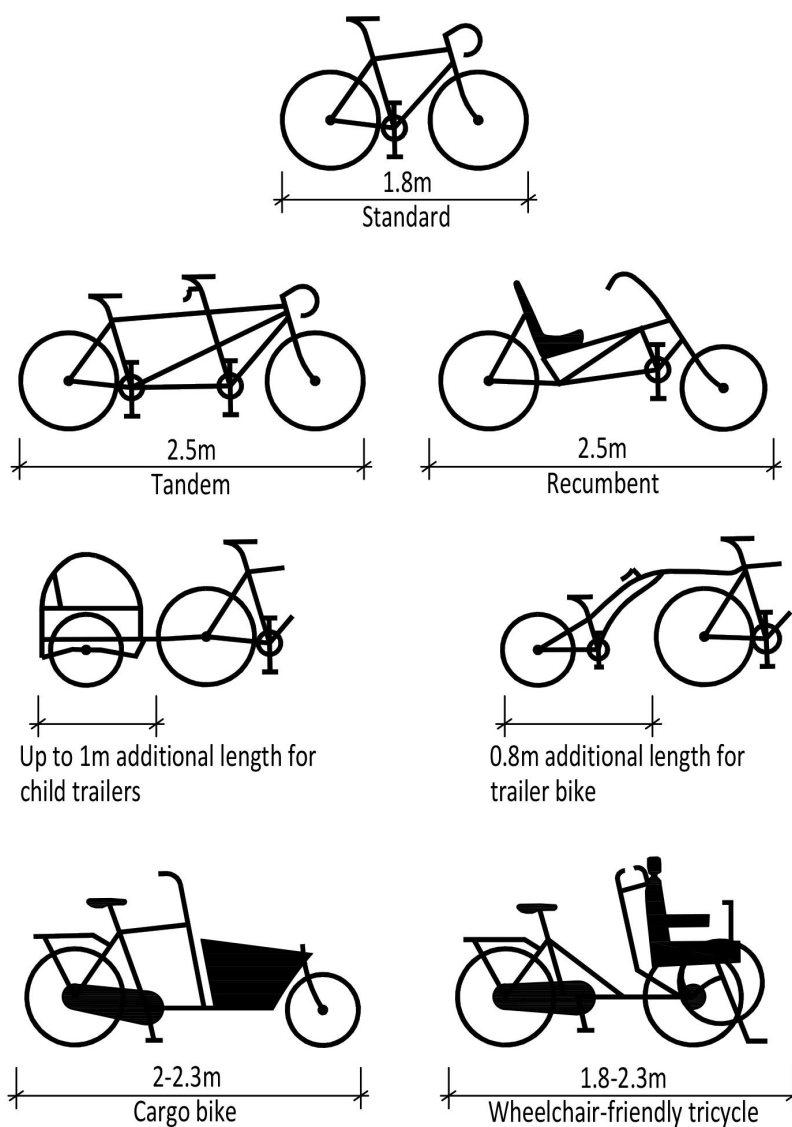
E/2.1 The dimensions of the cycle design vehicle shall be 2.8 metres long and 1.2 metres wide.

NOTE 1 The cycle design vehicle has been created to cater for a wide range of users.

NOTE 2 The length of 2.8 metres is made up of a bicycle at 1.8 metres plus a child trailer of up to 1.0 metres in length.

NOTE 3 Figure E/2.1N3 provides examples of different categories of cycle.

Figure E/2.1N3 Categories of cycle



E/3. Cycle route design

Common elements

Cycle lane and cycle track widths

E/3.1 Table E/3.1 shall be used to determine the desirable minimum and absolute minimum widths of different types of cycle routes.

Table E/3.1 Minimum widths of cycle routes

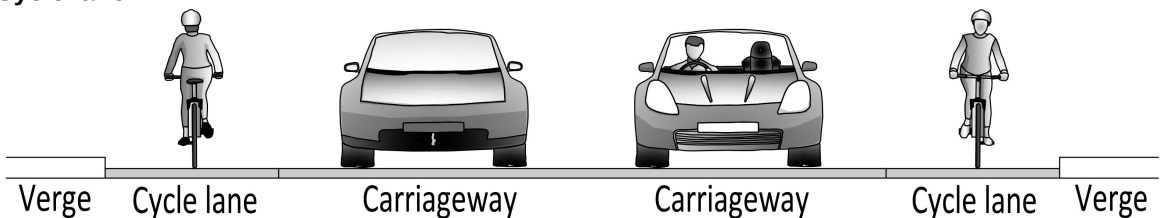
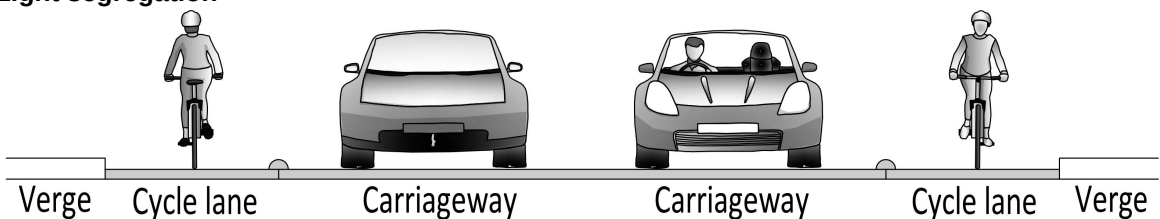
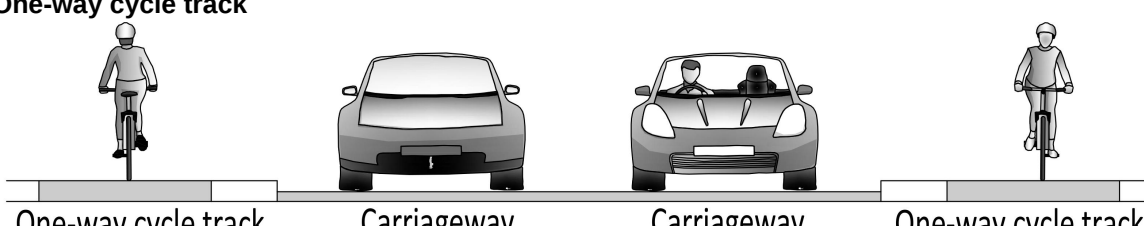
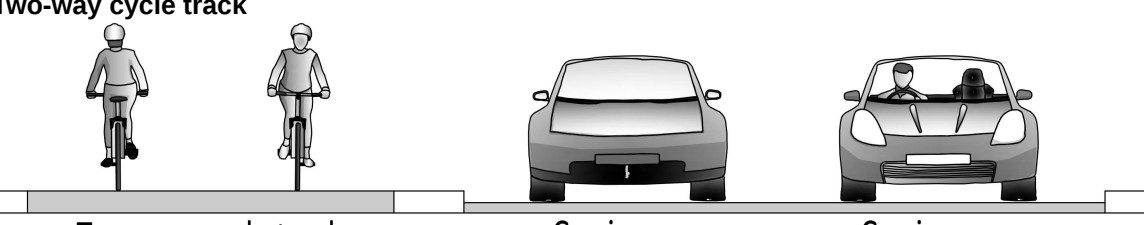
Cycle route type	Peak hour cycle flow (either one-way or two-way depending on cycle route type)	Desirable minimum width	Absolute minimum width (for sections up to 100 metres)
Cycle lane	<150	2.0 metres	1.5 metres
Cycle lane 			
Cycle route type	Peak hour cycle flow (either one-way or two-way depending on cycle route type)	Desirable minimum width	Absolute minimum width (for sections up to 100m)
Cycle lanes with light segregation	<150	2.5 metres	1.5 metres
Light segregation 			
Cycle route type	Peak hour cycle flow (either one-way or two-way depending on cycle route type)	Desirable minimum width	Absolute minimum width (for sections up to 100m)
One-way cycle track (including stepped cycle track)	<150	2.5 metres	1.5 metres
	150-750	3.0 metres	2.5 metres
	>750	4.0 metres	3.5 metres

Table E/3.1 Minimum widths of cycle routes (continued)

One-way cycle track 			
Cycle route type	Peak hour cycle flow (either one-way or two-way depending on cycle route type)	Desirable minimum width	Absolute minimum width (for sections up to 100m)
Two-way cycle track	<150	3.0 metres	2.5 metres
	150 or greater	4.0 metres	3.5 metres
Two-way cycle track 			

NOTE Cycle lanes with widths of more than 2.0 metres can benefit from a coloured surface, in addition to prescribed cycle markings to discourage general traffic from using the lane.

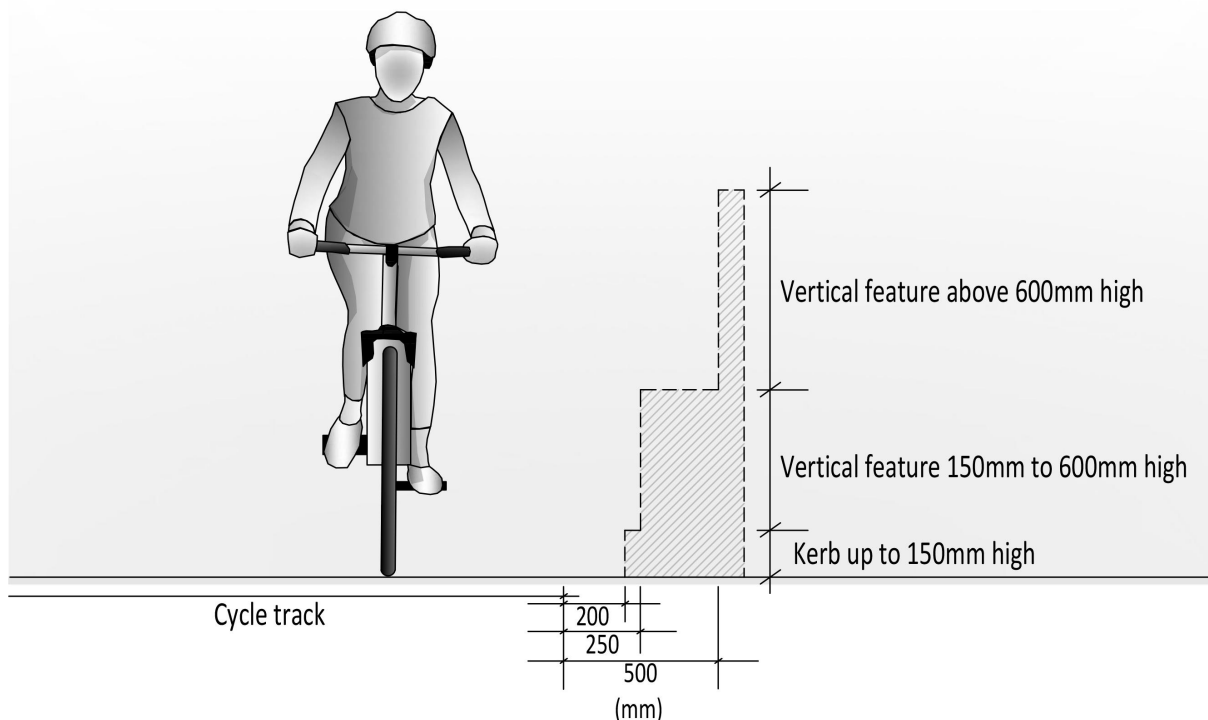
E/3.1.1 Where cycling is intended to take place in a shared bus lane, the bus lane should be a minimum of 4.5 metres wide.

E/3.2 Additional width shall be added to cycle tracks to make allowance for fixed objects adjacent to or within the cycle track in accordance with Table E/3.2.

Table E/3.2 Additional width required to maintain effective width of cycle tracks

Type of edge constraint	Additional width required to maintain effective width of cycle track (mm)
Flush or near-flush surface (up to 6mm high)	No additional width needed
Kerb or other vertical feature from 6mm to 150mm high	Add 200mm
Vertical feature from 150 to 600 mm high	Add 250mm
Vertical feature above 600 mm high	Add 500mm
Drainage gullies	Add width of drainage gully

NOTE Figure E/3.2N illustrates the additional width required to maintain effective widths for cyclists on cycle tracks.

Figure E/3.2N Additional width required to maintain effective width of cycle tracks

E/3.3 Where edge constraints are adjacent to both sides of the cycle track, then allowance for each edge constraint shall be made in accordance with Table E/3.2.

NOTE Using splayed kerbs along the edge of the cycle track increases the effective width and helps to prevent collisions by reducing the risk of pedals striking the kerb.

Visibility splays

E/3.4 A visibility splay shall be provided for cycle traffic approaching crossings and junctions where the cyclists have to stop or give way.

E/3.5 Cycle traffic "x" distances shall be provided in accordance with Table E/3.5.

Table E/3.5 "x" distances for cycle traffic

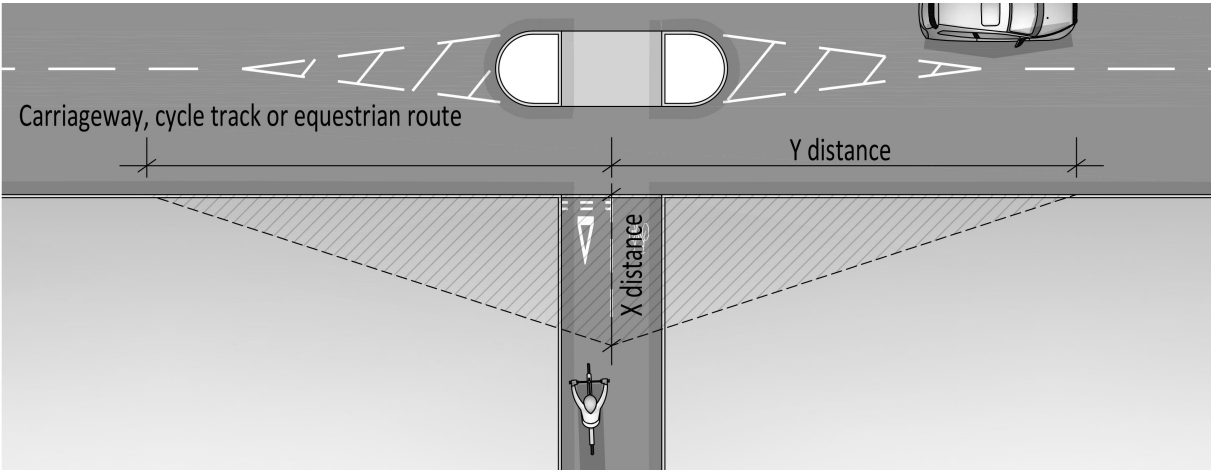
Desirable minimum (metres)	Absolute minimum (metres)
4.5	2.4

NOTE 1 The "x" distance is measured from a give way or stop line, back along the centre line of the minor arm.

NOTE 2 The desirable minimum "x" distance allows two cyclists to observe the full "y" distance and both accept the gap in traffic.

NOTE 3 Figure E/3.5N3 indicates the "x" and "y" measurement for cycle traffic.

Figure E/3.5N3 Visibility splay



NOTE 4 The "y" distance is the stopping sight distance (SSD) required.

NOTE 5 The "y" distance is measured along the edge of the major arm from the centre of the minor arm.

E/3.6 "y" distances at junctions on cycle tracks shall be provided in accordance with the SSD references in Table E/3.6.

Table E/3.6 SSD references for cycle traffic

Major arm	Minor arm	SSD reference
Carriageway	Cycle track	Table 7/1 in CD 123 [Ref 4.N]
Cycle track	Cycle track	Table E/3.19
Equestrian route or footpath	Cycle track	Table 3.4 in CD 143 [Ref 3.N]

E/3.7 An eye height range of 0.8 metres to 2.2 metres for cyclists shall be used when measuring the "y" distance.

E/3.8 The object height shall be taken as 0.26 metres to 2.0 metres when measuring the "y" distance for cycle routes.

NOTE More detail on object heights is provided in CD 109 [Ref 2.I].

Longitudinal gradients

E/3.9 Cycle track gradients shall be provided in accordance with Table E/3.9.

Table E/3.9 Maximum length for gradients

Gradient	Maximum length of gradient (metres)
2.0%	150
2.5%	100
3.0%	80
3.5%	60
4.0%	50
4.5%	40
5.0%	30

NOTE 1 Steep gradients can lead to high speeds for descending cyclists or low speeds for climbing cyclists, which can create hazards for all users of the route.

NOTE 2 *Stopping distances increase significantly on downhill gradients in excess of 3%.*

E/3.9.1 Level sections of 5.0 metres minimum length should be used between gradients to achieve compliance with Table E/3.9.

E/3.9.2 Cycle lanes, stepped cycle tracks and lightly segregated cycle lanes on or adjacent to existing carriageways may follow the existing gradient.

E/3.10 Potential hazards adjacent to a cycle route shall be subject to a risk assessment to determine the need for protective measures.

Cycle route transitions

E/3.11 Cycle route transitions shall be provided where a cycle lane joins or diverges from the carriageway.

E/3.12 Cycle route transitions between the cycle track and the carriageway shall be a continuous surfacing course.

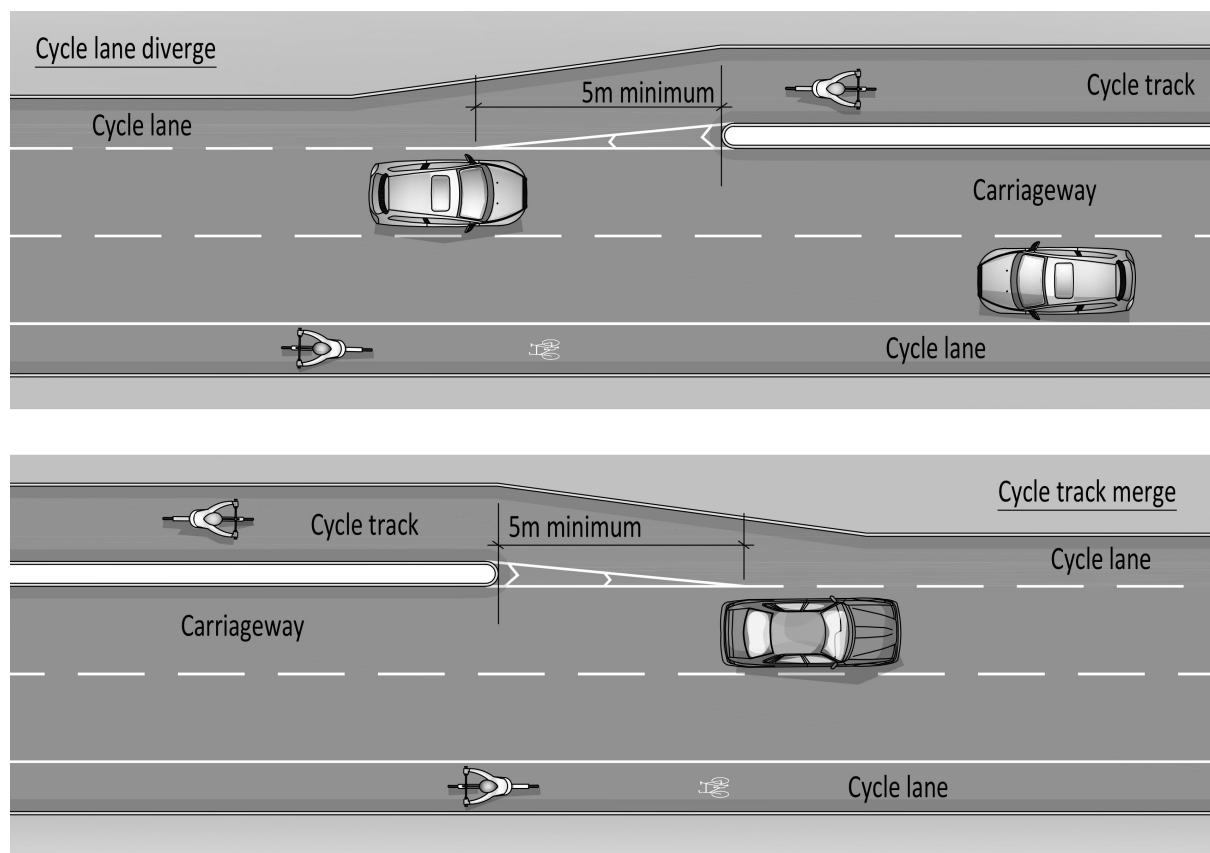
E/3.13 Where a cycle lane diverges away from the carriageway to become a cycle track, a cycle route transition shall be provided and include a mandatory cycle lane of a minimum of 5 metres length before diverging from the carriageway.

E/3.14 Where a cycle track re-joins the carriageway, a cycle route transition shall be provided and include a mandatory cycle lane of a minimum of 5 metres length before merging with a subsequent cycle lane.

NOTE *A cycle route transition can reduce the risk of cyclists colliding with vehicular traffic from behind whilst not inconveniencing on-carriageway cyclists.*

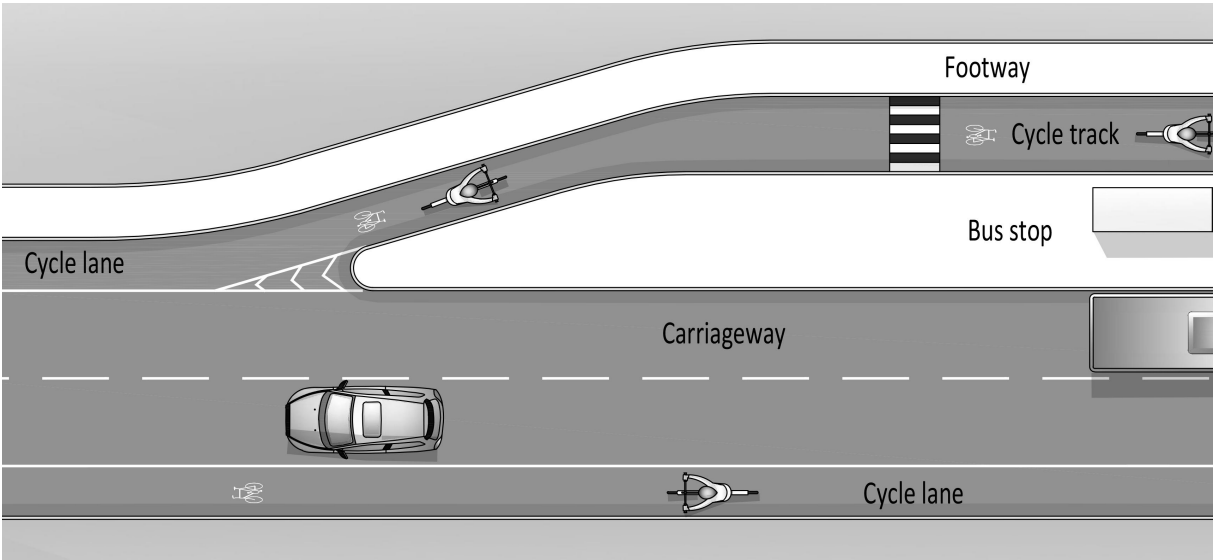
E/3.14.1 A cycle route transition between the carriageway and a cycle track should be smooth and gradual.

NOTE *Figure E/3.14.1N provides an indicative layout of a cycle route transition between a cycle track and carriageway.*

Figure E/3.14.1N Cycle route transition**Bus stops on cycle routes**

- E/3.15 Cycle tracks shall be designed so that passengers disembarking from buses do not step down directly on to a cycle track.
- NOTE 1** *Bus stops can be a point of conflict between cyclists and buses and also between passengers and cyclists.*
- NOTE 2** *Where there are high numbers of bus passengers boarding and alighting at the bus stop, a zebra crossing can be provided across the cycle track.*
- NOTE 3** *Figure E/3.15N3 provides an indicative layout of a zebra crossing across a cycle track at a bus stop.*

Figure E/3.15N3 Zebra crossing across a cycle track at a bus stop



- NOTE 4** Zebra crossings across cycle tracks do not necessarily include amber light beacons or zig-zag markings.
- E/3.15.1 Where a route with cycle lanes has bus stops with space available at the back, the cycle lane should be changed to a cycle track and routed behind the bus stop.
- E/3.15.2 Where it is not feasible to route the cycle track to the back of the bus stop, cycle lane markings should be omitted for the length of the bus stop, except where the bus stop is in a bus lay-by which would allow the cycle lane markings to continue outside the bus lay-by.
- NOTE** Requirements and advice for cycle tracks passing parking lay-bys are provided in CD 169 [Ref 11.N].

Off-carriageway elements

Design speed

- E/3.16 The design speeds in Table E/3.16 shall be used for cycle tracks.

Table E/3.16 Design speed for cycle tracks

Circumstance	Design speed (kph)	Absolute minimum design speed (kph)
On down gradients of 3% or greater	40	40
Gradients of less than 3%	30	20

- E/3.17 Absolute minimum values for cycle track design speed shall only be used for distances up to 100 metres.
- E/3.17.1 Where absolute minimum design speed values are used for cycle tracks, 'SLOW' markings should be included.

Stopping sight distance

- E/3.18 Minimum SSDs provided in Table E/3.18 shall be used for cycle tracks.

Table E/3.18 Minimum SSD

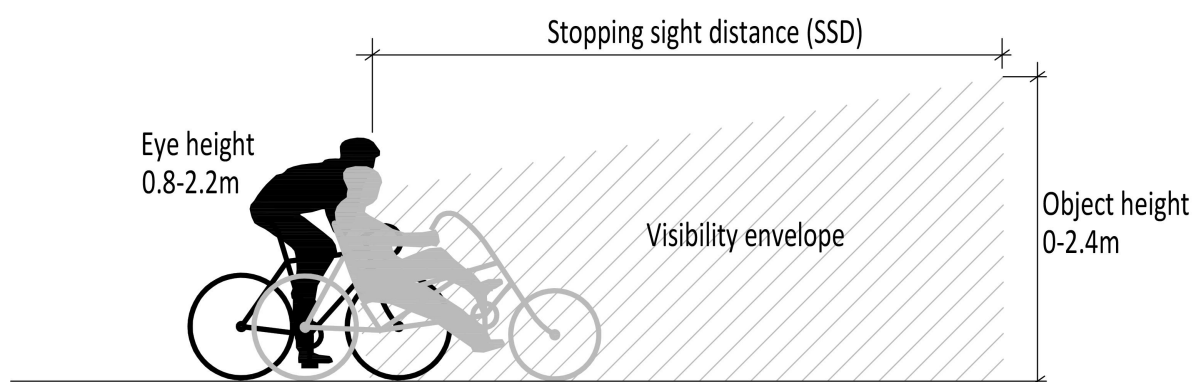
Design speed (kph)	Minimum SSD (metres)
40	47
30	31
20	17

NOTE SSDs are based on the same perception reaction times and deceleration rates for comfortable and emergency braking as assumed in CD 109 [Ref 2.1] Highway Link Design.

Forward visibility envelope

E/3.19 For cycle tracks, the forward visibility envelope shall allow for objects between the cycle route surface and a height of 2.4 metres to be visible from an eye height in the range of 0.8 metres to 2.2 metres.

NOTE The values quoted for the forward visibility envelope accommodate a range of cyclists including recumbent users, children and adults (reference Figure E/3.19N).

Figure E/3.19N Forward visibility envelope**Horizontal alignment**

E/3.20 Changes in horizontal alignment on cycle tracks shall be via simple curves with minimum horizontal radii values given in Table E/3.20.

Table E/3.20 Minimum horizontal radii for cycle tracks

Design speed (kph)	Minimum horizontal radius (metres)
40	57
30	32
20	14

NOTE The minimum cycle track horizontal radii values are based on a V^2/R of 28.28 as per CD 109 [Ref 2.1] Highway Link Design.

Vertical alignment

E/3.21 Sag and crest K values for cycle tracks shall be in accordance with Table E/3.21.

Table E/3.21 Minimum sag and crest K values for cycle tracks

Minimum sag K value	Minimum crest K value
5	6

Crossfall

- E/3.22 Crossfall shall be provided on cycle tracks to prevent the collection of surface water.
- E/3.23 Crossfall on cycle tracks shall not exceed 5%.
- NOTE** *Higher crossfall values can create manoeuvring difficulties and contribute to loss of control in icy conditions.*
- E/3.24 Crossfall greater than 2.5% shall not be used on cycle tracks where cycle traffic is moving slower than the design speed or coming to a stop.
- E/3.25 Crossfall on cycle tracks shall not be in an adverse direction where the horizontal radius is below 50 metres.

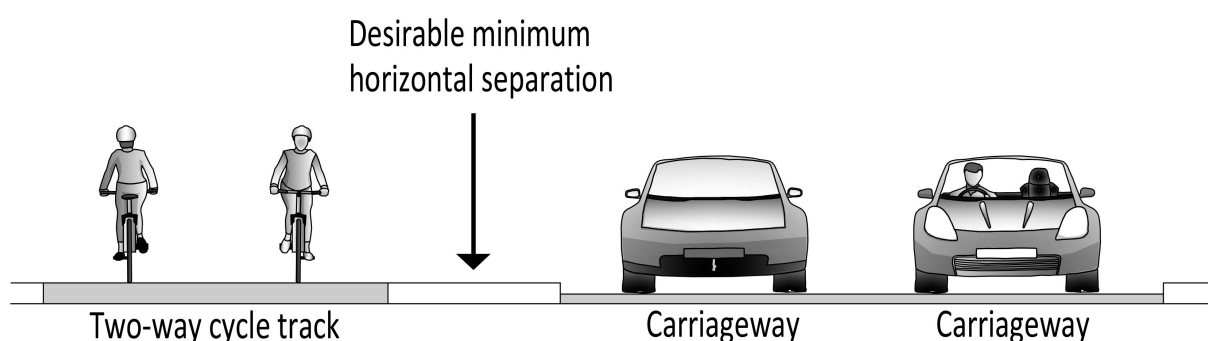
Horizontal separation

- E/3.26 The minimum width of the horizontal separation between the carriageway and the closest edge of a cycle track shall be determined using the values in Table E/3.26.

Table E/3.26 Minimum horizontal separation between carriageway and cycle tracks

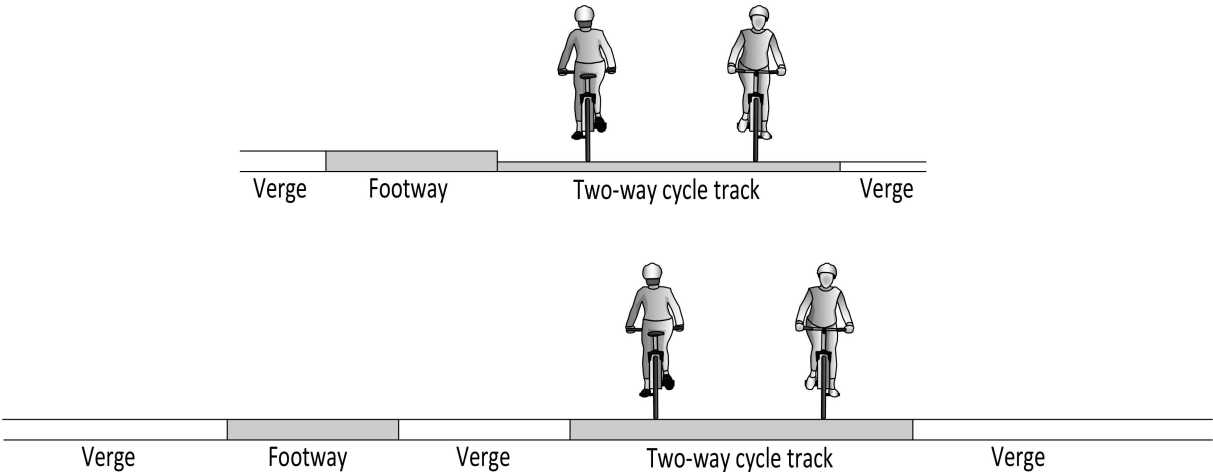
Speed limit (mph)	Desirable minimum horizontal separation (metres)	Absolute minimum horizontal separation (metres)
30	0.5	N/A
40	1.0	0.5
50	2.0 (including any hard strip)	1.5 (including any hard strip)
60	2.5 (including any hard strip)	2.0 (including any hard strip)
70	3.5 (including any hard strip)	3.0 (including any hard strip)

- NOTE 1** *Horizontal separation between the carriageway and cycle tracks helps protect cyclists from the draught created by passing motor traffic and from debris thrown up by vehicles.*
- NOTE 2** *Figure E/3.26N2 provides an indicative cross section for horizontal separation between the carriageway and cycle track.*

Figure E/3.26N2 Horizontal separation between the carriageway and cycle track

- E/3.26.1 Where a footway is adjacent to a cycle track this should be separated by a kerb or a verge.
- NOTE** *Figure E/3.26.1N provides indicative cross sections of the horizontal separation between a cycle track and a footway by a kerb and a verge.*

Figure E/3.26.1N Two-way cycle track seperation by kerb or verge



- E/3.26.2 Cycle tracks may be provided at the same or higher level as the adjacent carriageway.
- E/3.27 Where a solid white line is used to mark the edge of a cycle track, this shall be used in conjunction with an edge of carriageway marking to avoid drivers from mistaking the cycle track marking for an edge of carriageway marking.
- NOTE In unlit areas a solid white line to the Traffic Signs Regulations and General Directions (TSRGD 2016 [Ref 12.N]) diagram 1049B can be used to mark the edge of a cycle track adjacent to a kerb.
- One and two-way cycle tracks**
- E/3.28 Centre line markings shall be provided on two-way cycle tracks.
- NOTE 1 The use of centre line markings helps to differentiate one-way cycle tracks from two-way cycle tracks.
- NOTE 2 Figures E/3.28.N2a and E3.28.N2b illustrate typical cross sections of one-way and two-way cycle tracks adjacent to a carriageway.

Figure E/3.28N2a One-way cycle track adjacent to a carriageway

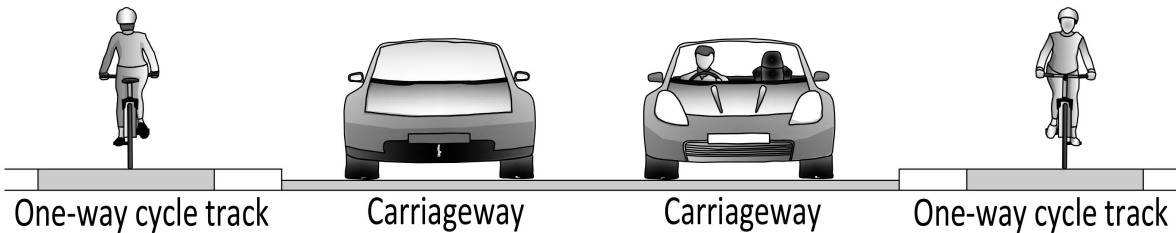
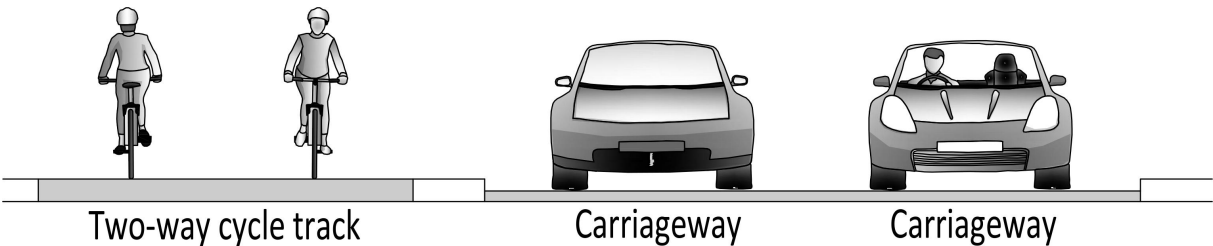


Figure E/3.28N2b Two-way cycle track adjacent to a carriageway



- NOTE 3 Further information on cycle track characteristics and potential hazards can be found in Appendix E/A.

Stepped cycle tracks

E/3.29 Where a stepped cycle track is to be used, a cycle route shall also be provided on the opposite side of the road to deter cyclists from using a stepped track as a two-way facility.

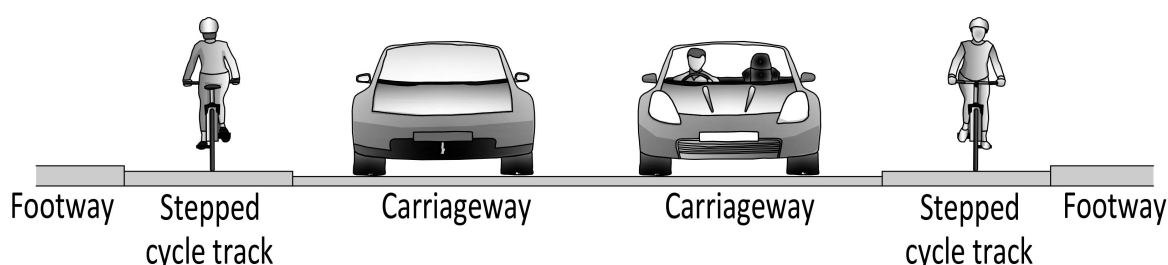
NOTE 1 *Stepped cycle tracks are one-way in the same direction of flow as the adjacent traffic lane.*

NOTE 2 *The advantage of the stepped cycle track is that it provides physical separation in a space efficient way by taking a similar amount of space to a cycle lane, and it allows cyclists to retain priority at side road junctions which have give-way priority.*

E/3.30 The height difference from a stepped cycle track to the carriageway shall be a minimum of 50mm with a further 25-50mm step up to an adjacent footway (if not separated by a verge).

NOTE *Figure E/3.30N provides an indicative cross section of a stepped cycle track.*

Figure E/3.30N Stepped cycle track



E/3.31 On the approach to junctions, stepped tracks shall transition to a mandatory cycle lane, a minimum of 5m before changing to TSRGD 2016 [Ref 12.N] markings (Diagram 1010) through the junction.

Measures to prevent motor traffic access to cycle tracks

E/3.32 Cycle tracks shall be clear of street furniture and obstructions with the exception of features to prevent motor traffic access.

E/3.33 The gap between posts and other physical constraints on cycle tracks shall be a minimum of 1.5 metres to restrict access by motor traffic while retaining access by cycle traffic.

E/3.34 Bollards on cycle tracks shall be aligned in such a way that enables a cycle design vehicle to approach and pass through the bollards in a straight alignment.

E/3.35 A frame and K frame type barriers, often used to prevent motorcycle access, shall not be used on cycle tracks.

NOTE *A and K frame barriers cannot be negotiated by the cycle design vehicle.*

E/3.36 Bollards on cycle tracks shall be designed to allow access for maintenance.

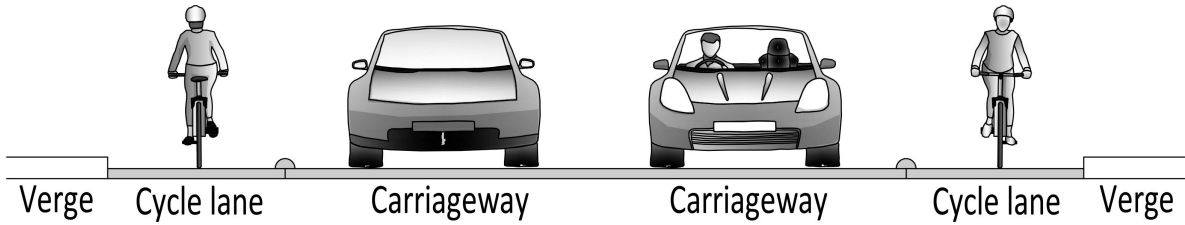
On-carriageway elements

Light segregation

E/3.37 Light segregation of cycle lanes shall only be used on mandatory cycle lanes.

NOTE 1 *Light segregated cycle lanes (as illustrated in Figure E/3.37N1) are mandatory cycle lanes with the addition of intermittent physical objects between motor traffic and cycle traffic to reduce the risks of motor vehicle incursion.*

Figure E/3.37N1 Light segregation



NOTE 2 *The options for segregation features can include flexible bollards, low height separators (typically less than 0.3 metres vertical height) or an intermittent raised kerb.*

E/3.38 A solid white line shall be marked on the motor vehicle side of a vertical feature used for the light segregation of a cycle lane.

E/3.39 The offset between the nearside of the solid edge line and vertical features of a light segregation cycle lane shall be in accordance with TSM Chapter 5 [Ref 13.N] for refuge islands.

E/4. Crossings

Cycle crossing design options

- E/4.1 The type of cycle crossing to be provided on links and at junctions shall be in accordance with Table E/4.1.

Table E/4.1 Suitable types of cycle crossing

Speed limit	Location type	Two-way traffic flow on carriageway to be crossed, AADT	Maximum number of lanes to be crossed in one movement	Preferred cycle crossing type	Other possible cycle crossing type(s) in order of preference
≥60 mph	All	Any	Any	Grade separated	No alternative
40 mph and 50 mph	All	>10000	Any	Grade separated	Signal controlled cycle crossing
		6000-10000	2 or more	Grade separated	Signal controlled cycle crossing
		0-10000	1	Uncontrolled: cycle traffic gives way	Grade separated or signal controlled cycle crossing
		0-6000	2	Uncontrolled: cycle traffic gives way	Grade separated or signal controlled cycle crossing
≤30 mph	Links	>8000	Any	Grade separated	Signal controlled cycle crossing
		0-8000	2	Parallel pedestrian/cyclist crossing	Signal controlled cycle crossing or grade separated
		0-4000	1	Uncontrolled: cycle traffic has priority	Signal controlled cycle crossing or grade separated
	Roundabout entries	>8000	Any	Grade separated	Signal controlled cycle crossing
		0-8000	2	Parallel pedestrian/cyclist crossing	Signal controlled cycle crossing or grade separated
		0-4000	1	Uncontrolled: cycle traffic gives way	Signal controlled cycle crossing or grade separated
	Roundabout exits	>8000	Any	Grade separated	Signal controlled cycle crossing
		0-8000	1	Parallel pedestrian/cyclist crossing	Signal controlled cycle crossing or grade separated
		0-4000	1	Uncontrolled: cycle traffic gives way	Signal controlled cycle crossing or grade separated

Table E/4.1 Suitable types of cycle crossing (continued)

Speed limit	Location type	Two-way traffic flow on carriageway to be crossed, AADT	Maximum number of lanes to be crossed in one movement	Preferred cycle crossing type	Other possible cycle crossing type(s) in order of preference
≤30 mph	Side road entries	>8000	Any	Grade separated	Signal controlled cycle crossing
		0-8000	2	Parallel pedestrian/cyclist crossing	Signal controlled cycle crossing or grade separated
		0-2000	1	Uncontrolled: cycle traffic has priority	Signal controlled cycle crossing or grade separated
	Side road exits	>8000	Any	Grade separated	Signal controlled cycle crossing
		0-8000	1	Parallel pedestrian/cyclist crossing	Signal controlled cycle crossing or grade separated
		0-2000	1	Uncontrolled: cycle traffic has priority	Signal controlled cycle crossing or grade separated

NOTE 1 'Speed limit' parameter refers to the highest speed limit on any arm at the junction.

NOTE 2 'Two-way traffic flow' refers to the traffic flow on the link to be crossed by cycle traffic.

E/4.1.1 The default option should be to design crossings for cyclists separate from pedestrian crossings.

E/4.2 The same type of cycle traffic crossing shall be used across a junction arm entry and exit.

NOTE At multiple arm junctions, each arm can have different types of cyclist crossing, provided that each junction arm entry and exit has a consistent cyclist crossing type.

Uncontrolled cycle traffic crossings

Priority cycle traffic crossings

E/4.3 Where cycle traffic has priority, the cycle track shall be on a flat-topped speed hump.

E/4.3.1 The use of coloured surfacing across the carriageway at the crossing point should be provided to highlight an area of the road intended for cycle traffic in accordance with CD 236 [Ref 9.N].

E/4.4 All speed humps must be constructed in accordance with the Highways (Road Humps) Regulations SI 1999/1025 [Ref 10.N].

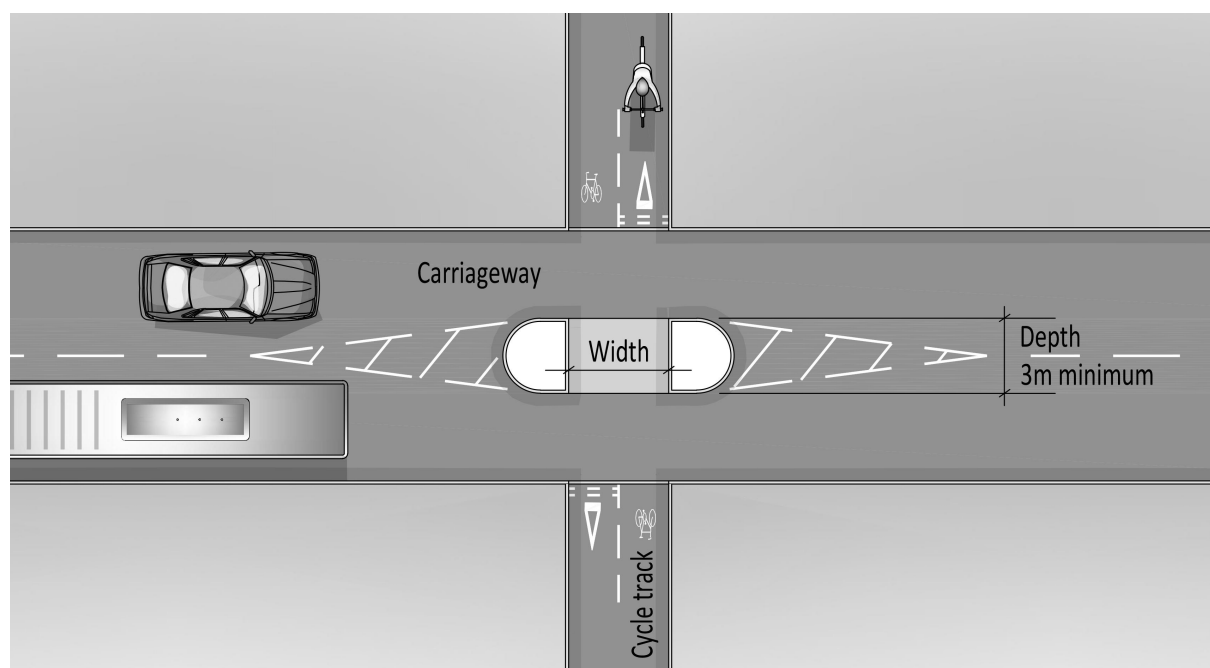
Refuges at cycle traffic crossings

E/4.5 Where a refuge is to be provided at a cycle traffic crossing, the width of the refuge shall provide space for cycle traffic at least equal to the width of the cycle track connecting to the crossing point either side of the carriageway (see Figure E/4.6).

NOTE Refuges allow cycle traffic to cross carriageways in two or more separate movements. At uncontrolled crossings they improve safety and comfort and reduce delay where cycle traffic does not have priority.

E/4.6 The depth of the refuge measured in the direction of cyclists' travel shall be a minimum of 3m (as shown in Figure E/4.6).

Figure E/4.6 Refuges at cycle traffic crossings



Cycle traffic crossings of priority junctions

Bent-out and bent-in crossings of minor roads

E/4.7 Cycle tracks which intersect the minor road at priority junctions shall cross the minor road in one of two ways - either bent-out or bent-in crossings.

NOTE 1 *Bent-out crossings cross the minor road away from the give way line.*

NOTE 2 *Bent-in crossings cross the minor road at the mouth of the junction as a mandatory cycle lane.*

E/4.8 Where a cycle route intersects the minor road of a priority junction, the order of preference for a crossing facility shall be the following:

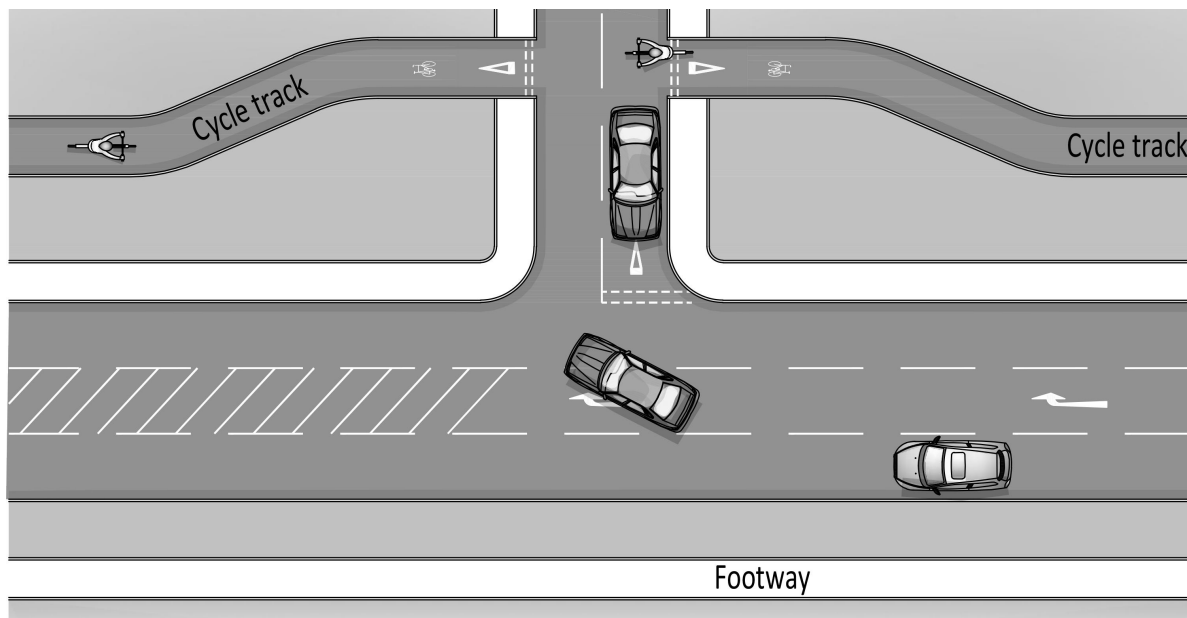
- 1) bent-out crossing where cycle traffic has priority;
- 2) bent-in crossing;
- 3) bent-out crossing where cycle traffic does not have priority.

NOTE *The decision to adopt at-grade priority for the cycle track depends on the amount of traffic turning in and out of the side road (and the ability to safely accommodate the anticipated volume of traffic turning off the main road when cyclists are using the crossing).*

E/4.9 Bent-out crossings shall not be used for stepped cycle tracks.

NOTE *Bent-out crossings of minor roads, as shown in Figure E/4.9N, are suitable for roads with a speed limit up to 30mph on the minor road.*

Figure E/4.9N Indicative layout of a bent-out crossing at a minor road



E/4.10 At bent-out crossings the set-back distance to the minor road crossing shall be measured from the kerbline of the major road, or from the kerbline of the nearside diverging taper if present, to the nearest edge of the cycle track.

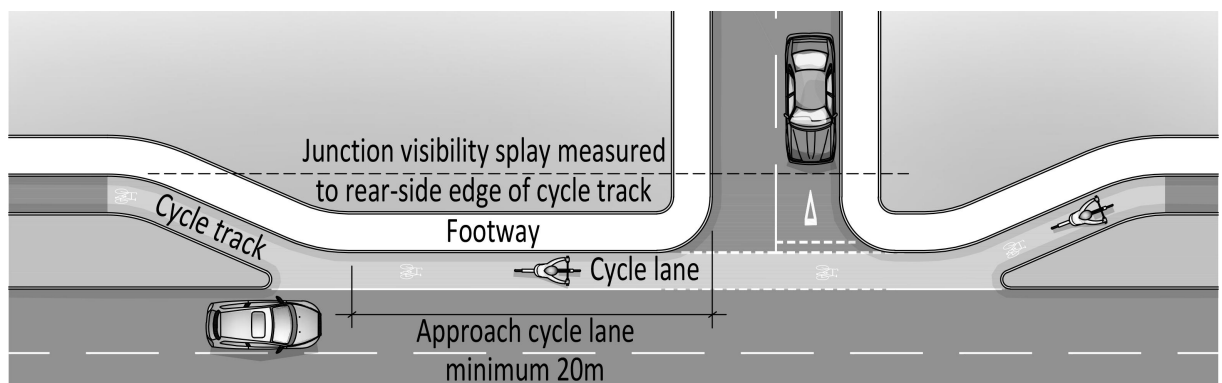
E/4.11 Where cycle traffic does not have priority at bent-out crossings the set-back distance for the crossing of the minor road shall be a minimum of 10 metres from the junction.

E/4.12 Where signal controlled bent-out crossings are provided on minor roads, the crossing shall be located far enough away from the major road so that vehicles do not queue back into the major road.

E/4.13 Where the signal controlled bent-out crossing cannot be located far enough away from the major road to prevent queuing on to the major road, the whole junction shall be signal-controlled.

- E/4.14 At bent-out crossings, where cycle tracks cross minor private access roads carrying less than 2000 AADT, there shall be no marked priority for either cycle traffic or traffic using the minor road.
- E/4.15 At bent-out crossings, where cycle tracks cross minor private access roads carrying less than 2000 AADT, there shall be a minimum set-back distance of 5 metres.
- E/4.16 Cycle tracks at bent-in crossings shall be one-way.
- NOTE 1 *Bent-in crossings of minor roads are suitable where the speed limit on any arm of the junction does not exceed 30mph.*
- NOTE 2 *Figure E/4.16N2 provides an indicative diagram of a bent-in crossing.*

Figure E/4.16N2 Indicative layout of a bent-in crossing



- E/4.17 At bent-in crossings the cycle track shall become a cycle lane in advance of the corner radius of the minor road junction.
- E/4.18 At bent-in crossings the length of the approach cycle lane shall be at least 20 metres.
- E/4.19 The cycle lane shall return to a cycle track immediately beyond the corner radius of the minor road junction at bent-in crossings.

Stepped cycle track crossings of minor roads

- E/4.20 Where a stepped cycle track approaches a minor road, the stepped cycle track shall transition to a cycle lane.
- E/4.21 At stepped cycle track crossings where the corner radius of the minor road is ≤ 6 metres, the length of the approach cycle lane shall be a minimum of 5 metres.
- E/4.22 At stepped cycle track crossings where a radius larger than 6 metres is used in the design, the length of the approach cycle lane shall be a minimum of 20 metres.
- E/4.23 Where the speed limit and traffic flows on the major road, downstream of the minor road, prevent the use of a cycle lane, the cycle lane shall return to a stepped cycle track immediately beyond the mouth of the minor road junction.

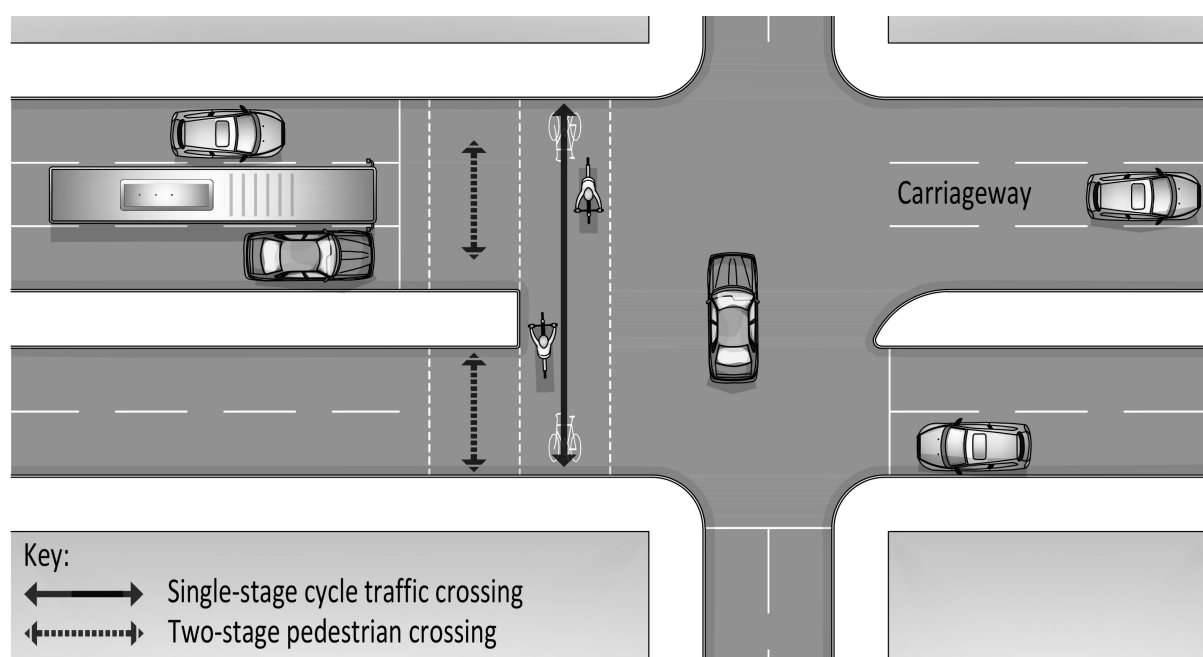
Controlled cycle traffic crossings

Signal controlled cycle traffic crossings

- E/4.24 Detectors shall be provided on the cycle track approaches to signal controlled crossings so that the cycle traffic green phase is called in advance of a cyclist arriving at the cycle track stop line.
- E/4.24.1 Cycle traffic may be controlled by primary low and high level cycle signals at the cycle traffic stop line.
- E/4.24.2 Secondary high level cycle traffic signals should be provided at signal controlled cycle traffic crossings where there is a risk of poor visibility to low level cycle traffic signals.

- | | |
|----------|--|
| E/4.24.3 | Where a cycle route passes through a series of signal controlled crossings, the signals should be coordinated to provide a green wave for cycle traffic, based on the cycle traffic design speed. |
| E/4.25 | Signal controlled cycle traffic crossings shall be provided with road markings to diagram 1055.3 TSRGD 2016 [Ref 12.N] Schedule 14, Part 2, Item 57 (informally known as elephant's footprints) to indicate to all road users the presence of the crossing and the route to be taken by cycle traffic. |
| NOTE | <i>Figure E/4.25N provides an indicative layout of a separate cycle traffic and pedestrian signal controlled crossing.</i> |

Figure E/4.25N Separate cycle traffic and pedestrian signal controlled crossing



- | | |
|----------|---|
| E/4.25.1 | The footway and cycle track on the approach to signal controlled cycle traffic crossings should be surfaced in contrasting materials to each other. |
| E/4.25.2 | A single stage should be provided to eliminate the need for cycle traffic to wait on islands in the middle of signal controlled junctions. |
| E/4.26 | The design parameters in Table E/4.26 shall be used for calculating signal timings for signal controlled cycle traffic crossings. |

Table E/4.26 Design parameters for calculating signal timings for signal controlled cycle traffic

Design parameter	Flat, downhill or uphill gradient of less than 3%	Uphill gradient of 3% or more
Reaction time	1 second	
Acceleration	0.5 m/s ²	0.4 m/s ²
Maximum design speed	20 kph	15 kph

- NOTE The cycle traffic crossing times at signal controlled cycle traffic crossings provided in Table E/4.26N are determined principally by the acceleration rate of cyclists.*

Table E/4.26N Cycle traffic crossing times for signal controlled cycle crossings

Crossing length (m)	Indicative situation	Cycle traffic crossing time from standing start	
		Flat, downhill or uphill gradient of less than 3% (seconds)	Uphill gradient of 3% or more (seconds)
8	Single carriageway	8	8
10		8	9
12		9	10
14		9	10
16	Dual 2 lane carriageway	10	11
18		10	11
20		11	12
22		11	12
24	Dual 3 lane carriageway	11	13
26		12	13
28		12	14
30		12	14
32		13	15
34		13	15
36		14	16

E/4.26.1 Designers may decide that there are circumstances where the maximum design speed of 15 kph, as suggested for uphill gradients of 3%, is appropriate as the design speed for flatter crossings.

NOTE *The assumed maximum design speed is based on the absolute minimum value given in Table E/3.17 to allow for slower-moving cyclists to clear the signals safely.*

E/4.27 The green aspect for cycle traffic at signal controlled cycle traffic crossings shall run for the minimum of 7 seconds (normal minimum green time for crossings).

E/4.27.1 On-crossing detectors at signal controlled cycle traffic crossings should be used to extend the green aspect to the maximum green for cycle traffic when demand necessitates.

E/4.28 The maximum green time at signal controlled cycle traffic crossings shall be no less than the cycle traffic crossing times given in Table E/4.24N derived using Table E/4.24.

E/4.29 Stages parallel with other traffic phases at signal controlled cycle traffic crossings shall be called if cycle traffic demand exists, even if no demand exists on parallel traffic phases.

Parallel pedestrian and cycle traffic crossings

E/4.30 Parallel pedestrian and cycle traffic crossings shall be used where it is necessary to provide crossings which cater for both cycle traffic and pedestrians.

E/4.30.1 Parallel pedestrian and cycle traffic crossings may be provided on raised tables subject to authorisation from the DfT.

NOTE *Statutory requirements for the layout of parallel pedestrian and cycle traffic crossings for pedestrians and cycle traffic are given in TSRGD 2016 [Ref 12.N].*

E/4.31 When providing for cycle traffic at roundabouts, parallel pedestrian and cycle traffic crossings shall be introduced between 5 metres and 20 metres from the give-way line.

E/4.31.1 When providing for cycle traffic at roundabouts, signal controlled pedestrian and cycle traffic crossings should be introduced at 20 metres or more than 60 metres from the give-way line.

- E/4.32 Parallel pedestrian and cycle traffic crossings shall be used in situations where zebra crossings are recommended in CD 116 [Ref 5.N].

Staggered crossings

- E/4.33 Staggered crossings shall not be used unless the central refuge can accommodate the design parameters for the cycle design vehicle and a two-way cycle track (including pedestrian facilities where appropriate) in accordance with Tables E/3.1 and E/3.2.

Toucan crossings

- E/4.34 Toucan crossings shall only be used where it is necessary for pedestrians and cyclists to share the same space at the crossing.

NOTE 1 An example of where it can be necessary to share the same space at a crossing would be where a shared use path leads to the crossing.

NOTE 2 Further guidance on the design of toucan crossings is given in Local Transport Note 02/08 LTN 2/08 [Ref 3.I] and Sustrans Technical Info Note No.18 [Ref 4.I].

Cycle traffic at grade separated cycle track crossings

Underbridges

- E/4.35 Height dimensions for cycle tracks at underbridges shall be provided in accordance with Table E/4.35.

Table E/4.35 Height dimensions for cycle tracks at underbridges

Length (m)	Cycle track headroom (metres)	
	Desirable minimum	Absolute minimum
<23	2.4	2.2
≥23	2.7	2.2

- E/4.36 Appropriate signs shall be used to warn cyclists of low headroom where underbridge heights do not meet the desirable minimum headroom height given in Table E/4.35.

- E/4.37 Kerb separation shall be provided between cycle tracks at underbridges and any adjacent pedestrian facilities.

Overbridges

- E/4.38 Where an overbridge is being introduced because a road severs an existing right of way, the overbridge shall be sited and aligned to minimise the diversion from the existing line of the cycle route.

NOTE Further requirements regarding overbridge design are provided in CD 353 [Ref 2.N] Design Criteria for Footbridges.

- E/4.39 Where a footpath is required alongside a cycle track on an overbridge, the footpath shall be separated from the cycle track with a kerb and additional width provided on the cycle track (see Table E/3.2).

Wheeling ramps

- E/4.40 Wheeling ramps at steps shall be a minimum of 100mm wide and be positioned 200mm from a vertical feature (for example a parapet or hand rail) to avoid handlebars and bags from becoming snagged.

- E/4.40.1 Wheeling ramps at steps should only be installed as an interim solution until there is acceptable alternative provision that is accessible to users of all types of cycle.

- E/4.40.2 Where wheeling ramps are used at steps, signing for a suitable alternative route should be provided.

NOTE The wheeling ramp can be provided as a channel or by infilling a section of the steps.

E/5. Junctions

On carriageway cycle traffic provision at priority junctions

- E/5.1 At priority junctions, the continuation of nearside cycle lanes using road markings to diagram 1010 (TSRGD 2016 [Ref 12.N]) shall be provided across the minor road(s).
- E/5.2 The width of a cycle lane shall be a minimum of 2 metres where the cycle lane is passing the mouth of a junction that does not have a minor road entry treatment road hump.
- E/5.3 Any segregation feature of a cycle lane on the major road approach to a priority junction shall be terminated a minimum of 5 metres from the minor road where the corner radius is 6 metres or less.
- E/5.4 Where a radius greater than 6 metres is used, the segregation feature of a cycle lane on a major road shall terminate a minimum of 20 metres from the minor road.

Cycle traffic at roundabouts

- E/5.5 Cycle lanes shall not be provided on the perimeter of the circulatory carriageway of a roundabout.

NOTE Cycle lanes on the perimeter of the circulatory carriageway of a roundabout encourage cyclists to take up a nearside position where they are vulnerable to being hit by vehicles exiting the roundabout.

Compact roundabouts

- E/5.6 At compact roundabouts, cycle tracks shall be provided when the total junction throughput is above 8,000 AADT.
- E/5.7 When cycling is on-carriageway through a compact roundabout, any cycle lanes, light segregated cycle lanes or stepped cycle tracks shall end 20-30 metres in advance of the give way line so that cyclists integrate with motor traffic on the roundabout approach.

Normal roundabouts

- E/5.8 At normal roundabouts, including where there are segregated left turn lanes, one of the following design options shall be used when providing for cycle traffic:
- 1) provide cycle tracks around the junction, with cycle track crossings of each arm;
 - 2) remodel the junction as a compact roundabout, where permitted by CD 116 [Ref 5.N];
 - 3) provide grade separated cycle tracks around and/or across the junction;
 - 4) introduce signal control to the roundabout, with appropriate cycle track provision;
 - 5) replace the roundabout with a signal controlled junction or another form of junction, with appropriate cycle track provision.

NOTE Refer to CD 116 [Ref 5.N] for requirements and advice for cycle tracks and shared use at segregated left turn lanes.

Cycle track priority around roundabouts

- E/5.9 Where cycle tracks are provided at roundabouts they shall be two-way, except where cycle traffic has priority over any of the roundabout entries and exits.
- E/5.9.1 Where cycle tracks are used on the roundabout approaches, they should link with cycle tracks around the roundabout.

Cycle traffic at signal controlled roundabouts

- E/5.10 When providing for cycle traffic, one of the following four approaches shall be used at signal controlled roundabouts:
- 1) on-carriageway provision;

- 2) off-carriageway provision;
- 3) a cycle track across or around the central island;
- 4) grade separated provision.

On-carriageway provision at signal controlled roundabouts.

E/5.11 Advanced stop lines shall not be used at signal controlled roundabout approaches that:

- 1) carry more than 5000 AADT;
- 2) have more than two traffic lanes; and/ or
- 3) receive more than 30% of the traffic signal cycle time.

E/5.12 Facilities for on-carriageway cycle traffic at signal controlled roundabouts shall be provided in accordance with Table E/5.12, in order of preference.

Table E/5.12 Methods of providing for on-carriageway cycling at signal controlled roundabouts

Order of preference	Method of provision	Description	References
1	Separate stages	Cycle traffic is provided with separate stages at the signal controlled node. Cycle traffic complete their manoeuvres without conflict. Cycle traffic approaches the signal controlled node via a cycle lane or track.	Appendix E/A
2	Exiting traffic held	Cycle traffic is provided with a track or lane (protected by light segregation) around the outside of the circulatory carriageway. Left turning motor traffic exiting the roundabout is held on red while circulating traffic are given a green aspect. Traffic turning left to leave the roundabout is given a green aspect at the same time as traffic entering the roundabout. This requires tighter exit geometry than is common where existing large roundabouts are signal controlled.	CD 116 [Ref 5.N] provides requirements for signal controlled roundabouts. Appendix E/A
3	Cycle gate with early release	A cycle gate controls how cycle traffic enters an area between two traffic stop lines (the reservoir area). Cycle signals show red to cycle traffic while traffic is receiving green at the two stop lines. Cycle traffic is released into the empty reservoir while traffic is held at the first stop line, and given an early release. This improves safety but introduces a time penalty for cycle traffic and is less suitable for cycle traffic movements that pass through a number of signal controlled nodes.	Appendix E/A

NOTE *Cycle gates can be used at signal controlled junctions at locations other than roundabouts.*

Cycle track provision at signal controlled roundabouts

E/5.13 Cycle tracks at signal controlled roundabouts shall be two-way, so that right turning cycle traffic takes the shortest route through the junction.

NOTE *Access to and from these two-way routes can be from one-way cycle tracks, cycle lanes or general traffic lanes on the roundabout entries and exits (see Section 4 for requirements for transitions between cycle tracks and carriageway).*

E/5.14 Cycle traffic crossings of the roundabout entries shall be integrated with the junction control so that cycle traffic can cross while circulatory traffic is receiving a green aspect.

E/5.15 Where the red period for motor traffic entering the roundabout is of insufficient duration to enable a minimum green to be provided for cycle traffic crossing movements, an alternative stage shall be provided on demand.

E/6. Signing

Cycle traffic direction signing strategies

E/6.1 Cycle traffic signing strategies shall be developed for all cycle routes.

E/6.1.1 Cycle traffic signing strategies should include the following attributes:

- 1) promotion of connectivity to local destinations and with local cycle networks in consultation with the local highway authority;
- 2) identification of primary, target, local place name and other local destinations in consultation with the local highway authority;
- 3) liaison with the local highway authority regarding all signed destinations so that they are coherently signed on the local cycle network until the destination is reached;
- 4) provision of additional cycle signs (blue face) to promote the cycle route and provide easier wayfinding for cyclists;
- 5) minimised sign clutter in accordance with Traffic Advisory Leaflet 01/13 Reducing Sign Clutter TAL 1/13 [Ref 5.I].

E/6.2 Cycle traffic direction signs shall be provided for all junction layouts for both on and off-carriageway cycle routes.

NOTE 1 *Existing road signs can be included as part of the overall cycle signing strategy if suitable to minimise sign proliferation and repeated information.*

NOTE 2 *Where route choice options are considered challenging to understand, wayfinding maps or TSRGD 2016 [Ref 12.N] "indication of a route for cyclists through a road junction ahead" signing can be beneficial where the path of cyclists through the junction is not intuitive.*

Design of direction signs for cycle traffic

E/6.3 There shall be a minimum clearance of 500mm between the edge of a cycle facility and any parts of a sign or lighting assembly that are less than 2.3 metres in height.

E/6.4 All sign faces shall be specified with retro-reflective material.

E/6.5 Either the distance or the cycle journey time to destinations shall be shown on cycle direction signs.

E/6.5.1 Where a destination is within a 15 minute cycle journey time, then the destination should be signed using the journey time and not the distance.

E/6.6 Where journey times are provided on signs, these shall be calculated assuming a typical cyclist speed on the route in question, taking account of factors (e.g. topography and crossing points) that can slow the cyclist.

E/6.6.1 The average speed of cyclists on a level surface should be assumed as 12mph (reference LTN2/08 LTN 2/08 [Ref 3.I]).

E/7. Normative references

The following documents, in whole or in part, are normative references for this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Ref 1.N	CTA, 'Cycle Tracks Act'
Ref 2.N	Highways England. CD 353, 'Design criteria for footbridges'
Ref 3.N	Highways England. CD 143, 'Designing for walking, cycling and horse riding (vulnerable users)'
Ref 4.N	Highways England. CD 123, 'Geometric design of at-grade priority and signal-controlled junctions'
Ref 5.N	Highways England. CD 116, 'Geometric design of roundabouts'
Ref 6.N	The National Archives. legislation.gov.uk. Highways Act 1980, 'Highways Act 1980'
Ref 7.N	Highways England. GG 101, 'Introduction to the Design Manual for Roads and Bridges'
Ref 8.N	The National Archives. legislation.gov.uk. Road Traffic Act 1988, 'Road Traffic Act 1988'
Ref 9.N	Highways England. CD 236, 'Surface course materials for construction'
Ref 10.N	The Stationery Office. SI 1999/1025, 'The Highways (Road Humps) Regulations 1999'
Ref 11.N	Highways England. CD 169, 'The location and layout of lay-bys and rest areas'
Ref 12.N	The Stationery Office. TSRGD 2016, 'The Traffic Signs Regulations and General Directions 2016'
Ref 13.N	The Stationery Office. TSM Chapter 5, 'Traffic Signs Manual Chapter 5 - Road Markings'

E/8. Informative references

The following documents are informative references for this document and provide supporting information.

Ref 1.I	Highways England. CT-elearning, 'Cycle Traffic E-Learning'
Ref 2.I	Highways England. CD 109, 'Highway link design'
Ref 3.I	LTN 2/08, 'Local Transport Note - Cycle infrastructure design'
Ref 4.I	Sustrans. Sustrans. Technical Info Note No.18, 'Toucan Crossings'
Ref 5.I	Department for Transport. TAL 1/13, 'Traffic Advisory Leaflet 01/13'

Appendix E/A. One-way and two-way cycle tracks

Table E/A.1 Characteristics, hazards and uses of one-way and two-way cycle tracks

	One-way cycle track	Two-way cycle track on one side of carriageway
Characteristics		
Layout	Cycle tracks along both sides of carriageway.	One cycle track.
Directness and coherence	Crossings of carriageway to access and leave the cycle track and make all movements.	Crossings of carriageway to reach destinations on the opposite side of carriageway from the cycle track; and for cyclists on that side to access the cycle track.
Hazards		
Turning movements	Cycle traffic at risk from left turning traffic entering side roads.	Cycle traffic at risk from left turning traffic entering side roads.
	Cycle traffic at risk, but lower risk than with two way cycle tracks, from right turning traffic entering side road and from minor road traffic entering the junction.	Cycle traffic at risk from right turning traffic entering side roads.
Blocking issues	Cycle track may be blocked by traffic queuing on side road, affecting one direction of cycle traffic.	Cycle track may be blocked by traffic queuing on side road, affecting both directions of cycle traffic.
	Cyclists may use main carriageway if side road blocked. This use would be in the same direction of travel as the adjacent general traffic lane.	Cyclists may use main carriageway if side road blocked. This may encourage use of the carriageway by cycle traffic travelling in the opposite direction to traffic in the adjacent general traffic lane.
Sight lines and visibility	When crossing side roads, whatever form of priority or control is provided, cyclists need to look behind to check for left turning vehicles.	When crossing side roads, whatever form of priority or control is provided, cyclists need to look behind to check for left turning vehicles (or right turning vehicles if travelling in the opposite direction to the adjacent general traffic flow).
	n/a	Sufficient separation or barriers may be needed to reduce risk of drivers being dazzled by oncoming cycle lights and cyclists being dazzled by oncoming vehicle head lights particularly on unlit roads.
	Cyclists may incorrectly use one-way tracks in the wrong direction if it is easier than crossing a major road. If cycle users persist in using one-way tracks the wrong way, this suggests that the facility may need to be made two-way.	n/a
Implementation locations		
Locations	Urban areas due to high frequency of side roads.	Rural and urban areas with few side roads.
	n/a	Large junctions where network for cycle traffic needs to maintain coherence.

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Road Layout
Design

CD 195

Northern Ireland National Application Annex to CD 195 Designing for cycle traffic

(formerly IAN 195/16)

Revision 0

Summary

This National Application Annex contains the Department for Infrastructure Northern Ireland specific requirements for cycle traffic on the trunk road and motorway network.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated team in the Department for Infrastructure, Northern Ireland. The email address for all enquiries and feedback is: dcu@infrastructure-ni.gov.uk

This is a controlled document.

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Release notes

Version	Date	Details of amendments
0	Sep 2019	Department for Infrastructure Northern Ireland National Application Annex to CD 195.

Foreword

Publishing information

This document is published by Highways England on behalf of Northern Ireland.

This document supersedes IAN 195/16 Cycle traffic and the strategic road network, which is withdrawn.

Contractual and legal considerations

This document forms part of the works specification. It does not purport to include all the necessary provisions of a contract. Users are responsible for applying all appropriate documents applicable to their contract.

Introduction

Background

This document provides requirements and advice relevant to the motorway and trunk road network for the design of infrastructure for cycle traffic. It is intended to be used by highway design professionals to facilitate the convenient and safe movement of cycle traffic, where cycling is legally permitted.

Assumptions made in the preparation of this document

The assumptions made in GG 101 [Ref 1.N] apply to this document.

NI/1. Requirements for cycle traffic

NI/1.1 Direction on the design of routes and facilities for cycle traffic in Northern Ireland shall be obtained from the Department of Infrastructure.

NI/2. Normative references

The following documents, in whole or in part, are normative references for this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Ref 1.N	Highways England. GG 101, 'Introduction to the Design Manual for Roads and Bridges'
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Road Layout
Design

CD 195

Scotland National Application Annex to CD 195 Designing for cycle traffic

(formerly IAN 195/16)

Revision 0

Summary

This National Application Annex contains the Transport Scotland specific requirements for cycle traffic on the trunk road and motorway network.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Transport Scotland team. The email address for all enquiries and feedback is: TSSStandardsBranch@transport.gov.scot

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0	May 2020	Transport Scotland National Application Annex to CD 195.

Foreword

Publishing information

This document is published by Highways England on behalf of Transport Scotland.

This document supersedes IAN 195/16 Cycle traffic and the strategic road network, which is withdrawn.

Contractual and legal considerations

This document forms part of the works specification. It does not purport to include all the necessary provisions of a contract. Users are responsible for applying all appropriate documents applicable to their contract.

Introduction

Background

This document provides requirements and advice relevant to the motorway and trunk road network for the design of infrastructure for cycle traffic. It is intended to be used by highway design professionals to facilitate the convenient and safe movement of cycle traffic, where cycling is legally permitted.

Assumptions made in the preparation of this document

The assumptions made in GG 101 [Ref 2.N] apply to this document.

S/1. Requirements for cycle traffic

- S/1.1 The design of routes and facilities for cycle traffic in Scotland shall be in accordance with Cycling by Design 2011 [Ref 1.N].

S/2. Normative references

The following documents, in whole or in part, are normative references for this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

Ref 1.N	Transport Scotland. Cycling by Design, 'Cycling by Design' , 2011
Ref 2.N	Highways England. GG 101, 'Introduction to the Design Manual for Roads and Bridges'

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Road Layout
Design

CD 195

Wales National Application Annex to CD 195 Designing for cycle traffic

(formerly IAN 195/16)

Revision 0

Summary

This National Application Annex contains the Welsh Government specific requirements for cycle traffic on the trunk road and motorway network.

Feedback and Enquiries

Users of this document are encouraged to raise any enquiries and/or provide feedback on the content and usage of this document to the dedicated Welsh Government team. The email address for all enquiries and feedback is: Standards_Feedback_and_Enquiries@gov.wales

This is a controlled document.

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Release notes

Version	Date	Details of amendments
0	Sep 2019	Welsh Government National Application Annex for CD 195.

Foreword

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W/1. Requirements for cycle traffic

- W/1.1 The design of routes and facilities for cycle traffic in Wales shall be in accordance with Active Travel (Wales) Act 2013 Design Guidance ATDG (W) [Ref 1.N].

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we are
cycling
The cyclists' champion **UK**

Space for Cycling

A guide for decision makers

space
for
cycling



Bristol:

Green spaces make great cycle routes



Leeds to Bradford:

Even the busiest roads can become cycle-friendly

Why create Space for Cycling?

Imagine your area with considerably less traffic. Imagine safe streets and neighbourhoods, clean air, young and old alike able to get out and about easily.

Planning for cycle-friendly roads and communities can help make this happen, bringing huge benefits for everyone - whether or not they themselves choose to cycle.

Economy: businesses benefit from more cycling as journey times are more reliable and workers are healthier and more alert. Cycling is certainly a good investment as the UK Government estimates that for every £1 invested in cycling, £5.50 is returned in social benefit.

Retail: cycling helps boost the local economy as people who cycle often shop more locally and more regularly.

Health: cycling regularly in mid-adulthood typically gives you the fitness of someone 10 years younger, improving your quality of life and reducing the burden on health services.

Environment: boosting cycle use helps mitigate air pollution and climate change.

Quality of life: safe, lightly trafficked streets provide a greater community feel than busy, heavily trafficked roads.

The Dutch cycle for 26% of their journeys: in Britain, it's less than 2%. We can do better! Investment in infrastructure is the single most effective way of getting people on to bikes.

The Space for Cycling process

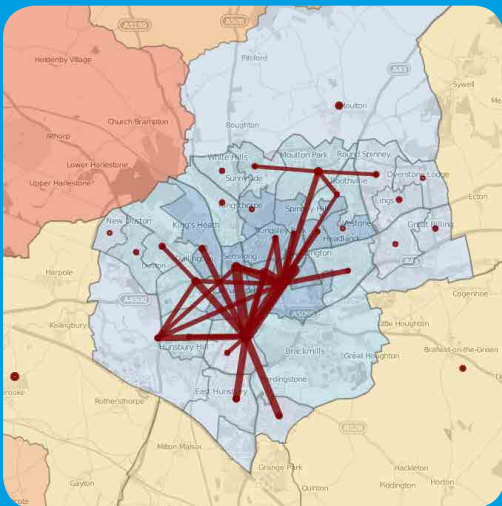
Space for Cycling is calling on councils to embark on a three-step process to create cycle friendly conditions:

Plan - Plan a comprehensive network of cycle-friendly routes

Invest - Actively seek the funding to implement your plan

Build - Build your network in accordance with up-to-date high quality design standards

This is a guide to achieving that process.



Plan:

The UK Government-funded 'Propensity to Cycle Tool' can help you prioritise key local routes



Invest:

Maintenance funding in New York to create cycle-friendly routes



Positive promotion of cycling

Step 1: Plan

Your goal is for every street, road and junction to be cycle-friendly, so that cycling becomes the natural choice for shorter journeys and for parts of a longer journey.

Start planning a core network and prioritising a few key routes which are likely to prove popular (you want your first investments in cycling to be as successful as possible!).

There is a suite of tools available to help you and your officers with this at:

cyclinguk.org/tools

From this base you can build a comprehensive cycle-friendly network by adding more protected Space for Cycling, area-wide 20 mph speed limits and by restricting motor-traffic in town centres and eliminating rat-runs.

Step 2: Invest

Funding pots exist in a variety of places and are highly dependent on the local context. For more information please refer to our 'Finding the Funding' guide online at:

cyclinguk.org/funding

Some tips for all local authorities are:

Commit to spending a meaningful amount of your transport budget on cycling: we recommend starting from a base of at least 5-10%. Edinburgh started from a base of 5% in 2011 and increases by 1% annually. In 2016, Edinburgh spent 9% of its local transport budget on cycling. This starts getting a network under way and creates a stronger case when making applications for further funding.

Use maintenance funding: New York City has introduced high quality provision very cost-effectively, by installing cycle tracks at the same time as resurfacing the carriageway.

Use revenue funding: it is possible to use revenue funding to promote cycling positively, e.g. in schools and workplaces close to any new cycle routes you build.

UK examples



Manchester:

A kerb separated bus stop bypass



York:

A verge separates a cycle track from a multi-lane dual carriageway



London:

A stepped cycle track with side-road priority



Leicester:

Wands offer light separation



Clackmannanshire:

Wands offer safe space on a rural route

Step 3: Build

A comprehensive cycle network will generally consist of three main forms of provision:

Protected space: the faster and busier the road, the greater the protection needed.

Quiet streets and lanes: Cycles and motor-vehicles can mix, provided speeds and traffic volumes are low enough.

Routes free of motor-traffic: Routes through parks and open spaces can be a joy to cycle and provide necessary links in a wider network.

Protected space

64% of adults in Britain say they are too frightened to cycle on main roads, yet these roads are often the most direct and convenient route from A to B.

With good planning, these routes can be safe for everyone. This can be achieved in a variety of ways:

A kerb, or a verge, separating a cycle track from the carriageway makes cycling possible alongside even the fastest dual carriageways.

A 'stepped' cycle track can offer good protection and use less space.

Planters and 'wands' can provide significant cost savings and allow people to cycle freely in and out of the cycle lane. They are useful as a temporary measure for trials and later upgrading.

Unseparated cycle lanes can help grow cycle use from a low base, provided motor-traffic speeds and volumes are low enough and the lanes are sufficiently wide to take into account parked car doors. However, they are usually not good enough to make cycling safe and normal for everyone, so should be progressively upgraded, particularly when roads are being resurfaced (see p7).

UK examples



Bristol:

Left turning motor-traffic held while cycles cross junction



London:

A roundabout with separation and separate cycle traffic lights



Cambridge:

A cycle priority crossing



Exeter:

Bridge over M5

Junctions and crossings

The safety and priority of cycle tracks at junctions is critical – this is where 75% of on-road cycling injuries occur. However, simple solutions exist to mitigate these risks:

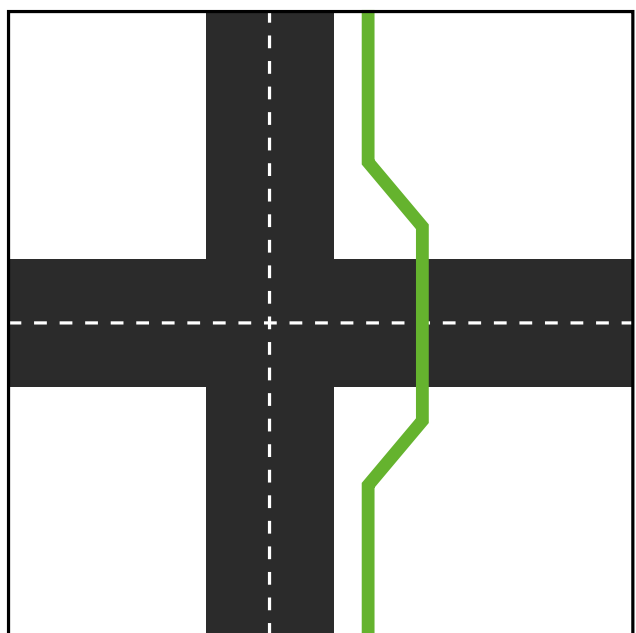
At busy junctions, cycle specific traffic lights, careful phasing and dedicated cycle tracks can be used to create safe conditions for all road users. For example, cycles and motor-traffic can safely cross a junction together so long as left-turning motor-traffic is held, to avoid the risk of ‘left-hooks’.

Where space permits, cycle tracks can bend away from junctions to cross at a side road. These crossings must be clearly visible and should give priority to people cycling.

Safer roundabouts with separate cycle lanes the whole way around and careful traffic light phasing have been successfully implemented in London.

Where junction capacity is an issue, new traffic light designs can give people cycling a head start on drivers.

Bridges or underpasses with step-free access and gentle gradients can provide useful links in a network.



Cycle track can cross junctions at side roads

UK examples



York:

20 mph on residential streets



Bristol:

Well sited bollards close rat-runs



Leicester:

Town centre free from motor-traffic



Merseyside:

Riverways can be a joy to cycle and provide direct routes

Quiet routes through town centres, neighbourhoods and rural lanes

Separation of motor-vehicles and cycles is not essential, provided traffic volumes and speeds are low enough.

The Dutch recommend that well-used cycle routes should be separated if they are used by more than 2500 motor vehicles per day, or if speeds exceed 20 mph in urban areas or 40 mph on rural lanes.

Collisions at 20 mph are seven times less likely to be fatal than those at 30 mph. 20 mph streets do not necessarily need traffic calming features. Signs or 'roundels' painted on the street and driver education may be sufficient.

Traffic volumes can be reduced by simply installing a couple of carefully-sited bollards, to reduce or eliminate motorised traffic from town centre streets or residential rat-runs.

Traffic-free routes

Town centres with little or no motor-traffic are safe and comfortable for people cycling, as well as being attractive spaces that can be enjoyed by all.

Parks, waterways, disused railway lines and the rights of way network can all make great routes, as well as providing opportunities for young and novice cyclists to develop their skills and confidence.

Evidence from Leicester, Birmingham and other places has shown that fears of pedestrian/cycle conflicts are rarely borne out in reality, provided routes are wide enough and thoughtfully designed.

People hit at **30mph** are **7 times** more likely to be killed as those hit at **20mph**



UK examples



London:

Fully accessible bus stop bypass



Kingston:

Wide two-way kerbed track



York:

Cycle-friendly bridge



Bristol:

Trailers are popular among people with children

Equality Duty

All new infrastructure should be built giving due regard to Public Sector Equality Duty as outlined in the Equality Act. This means taking into account the variety of people and types of cycle that will use it.

Everyone should be able to use the infrastructure. Children generally require more space. Trailer bikes are often used by people with very young children. Many disabled people use trikes, handcycles and adapted bikes as mobility aids that they are unable to dismount from.

Ensure all tracks are step-free, barrier-free and wide enough throughout for use by all kinds of people on all kinds of cycle. Bollards must be spaced widely enough for everyone to pass through. Avoid unnecessary traffic regulations for cycles and 'Cyclist dismount' signs.

Getting the most from your new infrastructure

Building and improving infrastructure is paramount but in addition there are a number of additional measures that can be taken to increase cycle usage:

Make Bikeability training and other targeted opportunities available for people of all ages and abilities. Work with local groups to get people under-represented in cycling – e.g. women and minority ethnic groups – to try cycling on any newly built or improved provision.

Positively promote cycling and the newly built infrastructure in the places where it matters (e.g. schools, local business centres).

Make sure routes are well publicised and well signposted.

cyclinguk.org/spaceforcycling

For over 135 years Cycling UK (formerly CTC) has inspired and excited people to cycle.

As a registered charity, we help millions of people to start cycling and keep cycling. We are the cyclists' champion and our Space for Cycling campaign aims to create the conditions where anyone can cycle anywhere.



For more information
cyclinguk.org/spaceforcycling

The national Space for Cycling campaign is led by Cycling UK with support from Cyclenation and the Cycling Embassy of Great Britain. It builds on the London based campaign created by the London Cycling Campaign.



This guide is intended for use outside of London and separate guidance has been produced by the London Cycling Campaign for use by councillors and decision-makers in London.

Supported by:



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Dutch example of 60km/h rural lane with cycle lanes and no centre lines



Streetview example of a ‘cycle-proofed’ trunk road underpass with extra space for a future cycle track



Streetview example of a 'cycle-proofed' trunk road underpass with extra space for a future cycle track

Appendix

Cyclists at roadworks

This appendix provides guidance for those planning, designing and operating temporary traffic management associated with construction activities on the highway to ensure that the convenience and safety of cyclists is fully considered alongside the needs of all other road users, as well as those undertaking the works.

It is important for temporary traffic management designers to examine and assess each and every site individually and not just apply standard layouts. Each option should be carefully considered and risk assessed to ensure that the most appropriate option is taken forward.

It is essential that temporary works are observed, maintained and monitored, with any risks and issues continuously addressed.

The guidance was developed jointly by a group of contributing organisations: AECOM, Amey, EnterpriseMouchel, Ringway Jacobs and Transport for London. It was written primarily for works undertaken on the Transport for London Road Network but it can also be applied to similar urban roads.

Background

Documents such as chapter 8 of the [Traffic Signs Manual](#) and [Safety at Street Works & Road Works, a Code of Practice](#) (the 'Red Book', 2013) refer to the need to consider cyclists when designing temporary traffic management. This appendix provides further detail on those considerations and takes forward ideas outlined in the Traffic Advisory Leaflet [TAL 15/99 Cyclists at Roadworks](#) (1999).

The Mayor's Vision sets out a pro-active approach to improving provision for cyclists through temporary layouts, stating that: 'We will monitor roadworks and building schemes to avoid unnecessary disruption to cycle routes. Following the standard set by Crossrail works at Farringdon, we will try to ensure that even when a road is closed to motor traffic, passage is still provided for bikes.'

Traffic lane widths in the range of 3.2 to 3.9m where there is no dedicated cycle lane. These provide pinch points and a level of uncertainty about whether safe overtaking is possible between cyclists and drivers. (Note that [TAL 15/99](#) suggests that lane widths of 3.25m and above are adequate for cars to overtake cyclists, but goes on to demonstrate that around 4m is needed for larger vehicles to overtake safely.)

Issues for consideration

There are a number of potential hazards or impacts that must be considered when designing 'cycle friendly' temporary traffic management. These include:

- pinch points that 'squeeze' cyclists
- removal or obstruction of existing cycle lanes or tracks
- unacceptably long diversion routes
- inappropriate use of temporary 'cyclists dismount' signs: where a clear route has been maintained, cyclists should still be able to use the carriageway
- poor temporary road surfaces, including raised ironworks
- raised cable protectors, hoses or road plates
- road closures (without cyclist exemption)
- one-way working (without cyclist exemption)
- cyclists entering the work site
- measures to avoid conflicts between cyclists and other vulnerable road users

Consideration of these issues should be made from the outset of every project, whether it is a major scheme or minor maintenance.

The issues that should be considered when developing the detailed temporary management proposals are as follows.

Temporary speed limits

Where road widths are limited but sufficient volumes of cycle traffic exists, consideration should be given to lowering the speed limit or a temporary maximum speed recommendation to encourage motorised vehicles to either safely overtake or follow cyclists. This will require a Traffic Order.

A temporary speed limit may also be required or desirable for other reasons such as to reduce risk to site operatives. Changes to speed limits could be either mandatory or advisory, depending on the duration of the works.



Temporary speed limit sign

Lane widths

Temporary lane widths through road works should be designed for cyclists comfort as well as safety. The key initial considerations are whether cyclists are predominantly on or off the carriageway and, if on carriageway, what the volume, speed and composition of motor traffic is. Transitions to and from areas with traffic management layouts are also important and consideration needs to be given to ways of preventing cyclists being 'squeezed' by manoeuvring vehicles at the lead-in taper.

Where cyclists are on-carriageway and the speed limit is 30mph or 20mph, it is usually desirable to keep them on carriageway through the roadworks. In this case, a wide lane (minimum width of 4m) enables drivers of all motor vehicles to overtake cyclists with an acceptable clearance.

If a 4m lane width cannot be achieved then, according to advice given in [TAL 15/99 Cyclists at Roadworks](#) (1999), a 'narrow' lane width of up to 3.25m to 3.50m will enable car drivers to overtake comfortably and will generally deter drivers of larger vehicles from trying to pass at all. If even 3.25m cannot be provided, then a 'narrow' lane width of up to 3.25m and a speed limit of 20mph should be considered with signs stating 'narrow lane(s): do not overtake cyclists'.

Lane widths between 3.50m and 4m should normally be avoided as drivers of large vehicles may attempt to overtake cyclists without adequate clearance.

On higher speed roads (40mph), there will often be off-carriageway provision for cyclists which they should be encouraged to use through signing, though cyclists will usually also be permitted to use the carriageway. In these cases, a minimum lane width of 4.25m should be used through the roadworks to enable comfortable overtaking of cyclists. Where this cannot be achieved, a speed limit of 30mph should be considered in conjunction with a 3.25m to 3.50m or 4m lane width, or a 20mph speed limit and 'narrow' lane as described above. Consideration should be given to the need for extra width at bends and turns in traffic management layouts.

On roads with speed limits of 50mph or more, scheme specific measures appropriate to the existing provision and use by cyclists should be provided.

On prestige cycle routes, including Cycle Superhighways, or routes with high peak time cycle flows (> 10 per cent of vehicles), consideration should be given to arranging the works layout such that temporary cycle lanes can be provided. Where it is not feasible to maintain two-way traffic and where there are significant cycle flows, consideration should be given to providing a cycle contra-flow facility. This will be particularly beneficial where a diversionary route would satisfy one or more of these conditions:

- be in place for a long period
- involve significantly greater effort owing to distance and gradients
- put cyclists at greater risk due to the road layout and traffic conditions

Contraflow cycle facilities should be a minimum of 1.2m wide (recommended 1.5m) and may require some physical segregation from opposing traffic, based on site-specific risk assessment.

It should be noted the minimum lane width recommended in the DfT code of practice, [Safety at Street Works and Road Works](#) (2013), to enable the passage of buses and HGVs is 3m.

Summary of recommended lane widths at roadworks

<3.25m	Consider 20mph speed limit and 'Narrow lane: do not overtake cyclists' sign
3.25 to 3.5m	Too narrow for drivers of large vehicles to overtake but cars can pass cyclists
3.5 to 4.0m	To be avoided
4.0m+	Wide enough for all vehicles to overtake on lower speed roads (20mph)
4.25m+	Wide enough for all vehicles to overtake on higher speed roads

Note that these are different from the recommended widths in LCDS section 4.4, because they take into account effective width for cyclists in scenarios where there is a physical barrier on both sides of the lane.

Traffic signal timings

Temporary traffic signals should give cyclists sufficient opportunity to pass safely through road works (appropriate intergreen times should be used, see also 'Lengths of road works' below), particularly where oncoming motor vehicles cannot pass without conflict. When specifying the most appropriate arrangements, consideration should be given to clearance times for cyclists, particularly on steep hills.

Length of road works

Cyclists are generally more at risk through road works, so limiting the length of the site should be considered. For example, if a scheme is to be constructed over 100m and a cycle facility or wide traffic lanes (4m+) cannot be provided, then it should, where possible, be completed in shorter sections to reduce the exposure of cyclists travelling through pinch points. If the length of the work site cannot be adapted, and there is significant cycle demand, then an alternative off road cycling facility or other measures such as a general traffic diversion should be considered.

Maintaining access

Wherever possible, access should be maintained for cyclists in both directions throughout the period of road works, avoiding more hazardous diversions. Cyclists are unlikely to accept lengthy detours or long delays. In such conditions some cyclists will be tempted to ride contra-flow or use footways. This can be avoided by, for instance, providing a temporary segregated cycle lane, shared path or route away from the carriageway. This kind of provision will be most desirable on dual carriageways.

Temporary route signing

Temporary routes and other facilities for the exclusive use of cyclists (and pedestrians) should be clearly signed well in advance of the road works. The examples shown below are sign face template examples. Other temporary signs such as 'Cyclists use ramp onto footway' may also be useful.

It should be noted that signs marked ** below do not have specific Department for Transport approval. However Regulation 53.(1).(e).(i) of TSRGD (2002) states 'in this regulation 'temporary sign' means a sign placed on or near a road for the purpose of conveying to traffic warnings about, or information on how to avoid, any temporary hazards caused by works being executed on or near a road'. It is for highway authorities to define what constitutes a specific 'hazard' in any given location, but there is a strong case for regarding narrow lanes as such a hazard for cyclists.



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Note that narrow lanes may not be the only reason why there may be a design to instruct drivers not to overtake cyclists. Greater risk at bends and corners may also justify a 'do not overtake' sign.

Road surface

It should be borne in mind that cyclists are particularly vulnerable to uneven, slippery or excessively rough surfaces. Therefore, consideration should be given to phasing of works to avoid temporary surfaces or raised ironwork.

If cyclists are to be signed via a diversion route, then the surfacing on this alternative alignment should be checked and corrected if necessary before the diversion is introduced. Where raised iron work is unavoidable, in addition to warning signs, consideration should be given to marking it in a contrasting colour to improve visibility, in addition to warning signs.

Barriers

It has been identified that cyclists will often pass through a line of cones and enter the works safety zone, and even the works area on occasion. This could be minimised by the use of a solid barrier and closely spaced cones in the taper and the first metre, then normal cone spacing along the remaining length, whilst also providing barriers alongside the linear safety zone. This would provide a clearer obstruction to cyclists, to discourage encroachment into the working and safety zones.

Road Safety Audit

A Road Safety Audit may be required for temporary traffic management schemes. TfL policy is that such schemes will not generally require auditing unless they remain in operation for a period of six months or more. Consideration should be given to auditing temporary traffic management schemes that are to remain in operation for a period of less than six months if a significant impact on the highway network is anticipated.

Temporary traffic management layouts

Some schematic drawings adopting the general principles detailed in section 3 have been developed in order to assist with the design of temporary traffic management to cater for cyclists more adequately.

In developing the most appropriate solution, reference should also be made to the 'Cyclists and temporary traffic management design checklist' below.

The overall risk to cyclists should be considered on a case-by-case basis, taking into account, firstly, the number of cyclists and the effect that the proposed works and resultant temporary traffic management will have on their journey. The assessment should include an estimation of the relative cycle and non-cycle flows. If a significant number of cyclists will be affected by road works, then they should be provided for specifically in the design of temporary traffic management. If an existing facility exists, every effort should be made to maintain it.

There are a number of actual and hypothetical scenarios in the ‘worked examples’ section below, providing further commentary and drawings relating to measures for cyclists at road works.

‘Cyclists dismount’ signs

Simply placing a ‘cyclists dismount’ sign at each of the works is not acceptable and is only to be used where there is no vehicular access of any kind through the works. It should be noted that in cases such as option 2 below, the presence of a shared/segregated footway avoids the need for ‘cyclists dismount’ signs. The use of this sign has not been covered in this guidance because there is invariably a more suitable solution.

Cyclists and temporary traffic management design checklist

Project name:			
Location:			
Road number:		TLRN / SRN / borough?	
AADT (two-way):			
Peak hour cycle flow (two-way):			
Per cent of commercial vehicles			

Existing cycle facilities		Proposed temporary cycle facilities	
Direction 1:		Direction 1:	
Direction 2:		Direction 2:	
Junction 1:		Junction 1:	
Junction 2:		Junction 2:	
Existing speed limit (mph):		Proposed speed limit (mph):	
Existing no. of lanes:		Proposed no. of lanes:	
Existing nearside lane width (m) if no cycle lane:		Proposed nearside lane width (m) if no cycle lane:	

	Y, N or n/a
Existing cycle facilities maintained? If not, see below.	
Lane widths appropriate for cyclists?	
Alternative off-carriageway cycle facility necessary?	
Temporary off carriageway cycle facility signed and TTRO?	
Intergreen timings at temporary signals suitable for cyclists?	

Intergreen timings suitable for cyclists on steep gradients?	
Temporary signal cables in existing ducts or use wireless	
portable traffic signals?	
Temporary ASL provided if temp signals layout over 30 days?	
Barriers / closely spaced cones to deter cycle encroachment?	
Cycle 'escape areas' provided, where continuous barriers?	
Length and number of pinch points minimised?	
All access maintained for cyclists?	
Off line cycle diversion required?	
Cycle safety, and surface checked on diversion?	
Cyclists at Road Works – Guidance Document 15	
Cyclists dismount signs provided? Only if all alternatives have been rejected?	
Cycling prohibited signs provided, if no suitable alternative?	
If narrow lanes, 'do not overtake cyclists' signs specified?	
Offside merge provided on two lane carriageways?	
Bus stops suspended in works area?	
Is a Road Safety Audit required as per TfL SQA0170?	

Traffic management option 1 – Temporary cycle lane on carriageway

If an existing cycle facility exists either on a wide single lane carriageway or on a dual carriageway, the priority should be to maintain the facility 'on-line' using temporary signs, cones / barriers and road markings as required. The costs and disruption associated with the application (and subsequent removal) of new line markings should be balanced against a temporary facility provided by a line of cones. As such, line marking a temporary cycle facility is unlikely to be practical for layouts in place for less than 30 days. (See Traffic Management Layouts A, B and C)

Traffic management option 2 – Temporary shared path on footway

Should it not be practicable to maintain an 'on-carriageway' facility and where an adjacent footway of at least 3m is available, consideration could be given to temporarily diverting the cyclists on to the footway. There may be some locations where a slightly narrower footway could be considered (2m absolute minimum) if there is no street furniture obstructing the footway and the timing of the works is such that pedestrian and cycle flows are low. The most convenient diversion requiring the least movement away from the cyclists' desire line should be used.

Should the footway be wide enough and have no trips or hazards a temporary dedicated cycle track could be considered, though shared use would be simpler and easier to implement, depending on the site specific details, the pedestrian and cycle flows and whether it is 1 or 2-way. Dropped kerbs for access to and egress from the footway will be necessary or a secure temporary ramp could be provided.

The need for a buffer/safety zone for cyclists on the footway from any adjacent traffic should also be considered for safety reasons. The use of this option will require a Temporary Traffic Management Order or Notice of the temporary cycle facility, appropriate signing and involve consultation / advertising periods (of up to 6 weeks). (See Traffic Management Layout D)

Traffic management option 3 – Temporary speed limit on carriageway

A temporary reduced speed limit is an option if a high volume of cycle traffic exists and if it is desirable to keep cyclists on the carriageway. A lower speed limit allows cyclists to be followed or overtaken by cars at reduced clearances, useful in situations where lane widths are limited. The temporary speed limit could be either advisory or mandatory.

Where works are due to be completed within 60 days it is suggested that an advisory lower speed limit is signed (see sign face template examples above). Where works are due to last longer than 60 days, a mandatory lower speed limit should be considered.

Where narrow lanes are provided, such that it is not wide enough for motor vehicles to safely overtake cyclists, an advisory speed limit of 20mph should be considered through the road works. (See Traffic Management Layouts E and F)

Traffic management option 4 – Reduced available lane widths

Where no on-line or reasonable off-line facility can be provided, reducing the available lane widths to discourage overtaking movements should be considered. (See Traffic Management layouts G and H) This would also have an effect of reducing vehicle speeds. Practically, a restriction of this nature would not be enforceable but can be signed using a temporary sign warning of the hazard caused by works being carried out on or near the road.

Recent observations of a temporary one way traffic management layout suggest that the reduction of a lane to 3.0m will strongly deter large vehicles from attempting to overtake cyclists. Alternatively consider making the works and working area narrower to enable provision of a cycle lane within the remaining carriageway width.

Traffic Management Layout 5 – Motorist diversion

Practitioners should be aware that cyclists should not be unreasonably disadvantaged compared to motor traffic and may not use a long or poor quality diversion. A risk assessment should be undertaken to establish whether motorised traffic should be diverted whilst allowing cycle traffic to continue adjacent to the works area. (See Traffic Management layout I)

Depending on the length of the closure you may need to consider a no through road option for service vehicles with a gateway / point closure beyond which only cycles may pass in accordance with 'no entry except cycles' signage (authorised by DfT in November 2011). Note the use of 'road ahead closed except cycles' signage is currently being discussed with DfT in terms of authorisation.

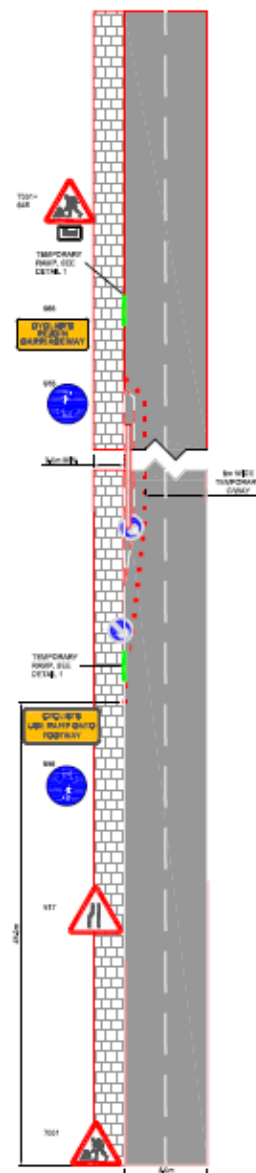
Traffic management option 6 – Off-line cyclist diversion

Should it not be practicable to maintain acceptable provision for cycling through the road works, the most convenient off-line diversion should be sought. This option could be appropriate where a full road closure is intended and a shorter/alternative diversion for cyclists than for motorists is possible (see Worked Example 2).

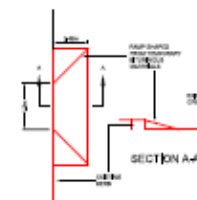
This option may also be useful where the road works are closing an off carriageway cycle facility and it is not appropriate to simply direct cyclists adjacent to the works via the carriageway.

Where a diversion is proposed, provision and maintenance of appropriate signing is vital (see example signs above). Assessment should be undertaken of the diversion route to ensure that it is suitable for cyclists, including: surface condition, suspension of prohibitions, right turn movements designed out / or cyclists routed via signals so right turn movements can take place under signal control. (See Traffic Management Layout J)

When designing the cycle diversion care should be taken to avoid the potential issue of motorists following the cycle diversion signs. This can sometimes be the case with black on yellow signage, therefore the need to make the cycle route as clear as possible to both general traffic and cyclists is paramount. This could be achieved by using versions of the signs with special symbols ie. black on yellow with text such as 'Cyclists follow [diamond symbol]' or similar.



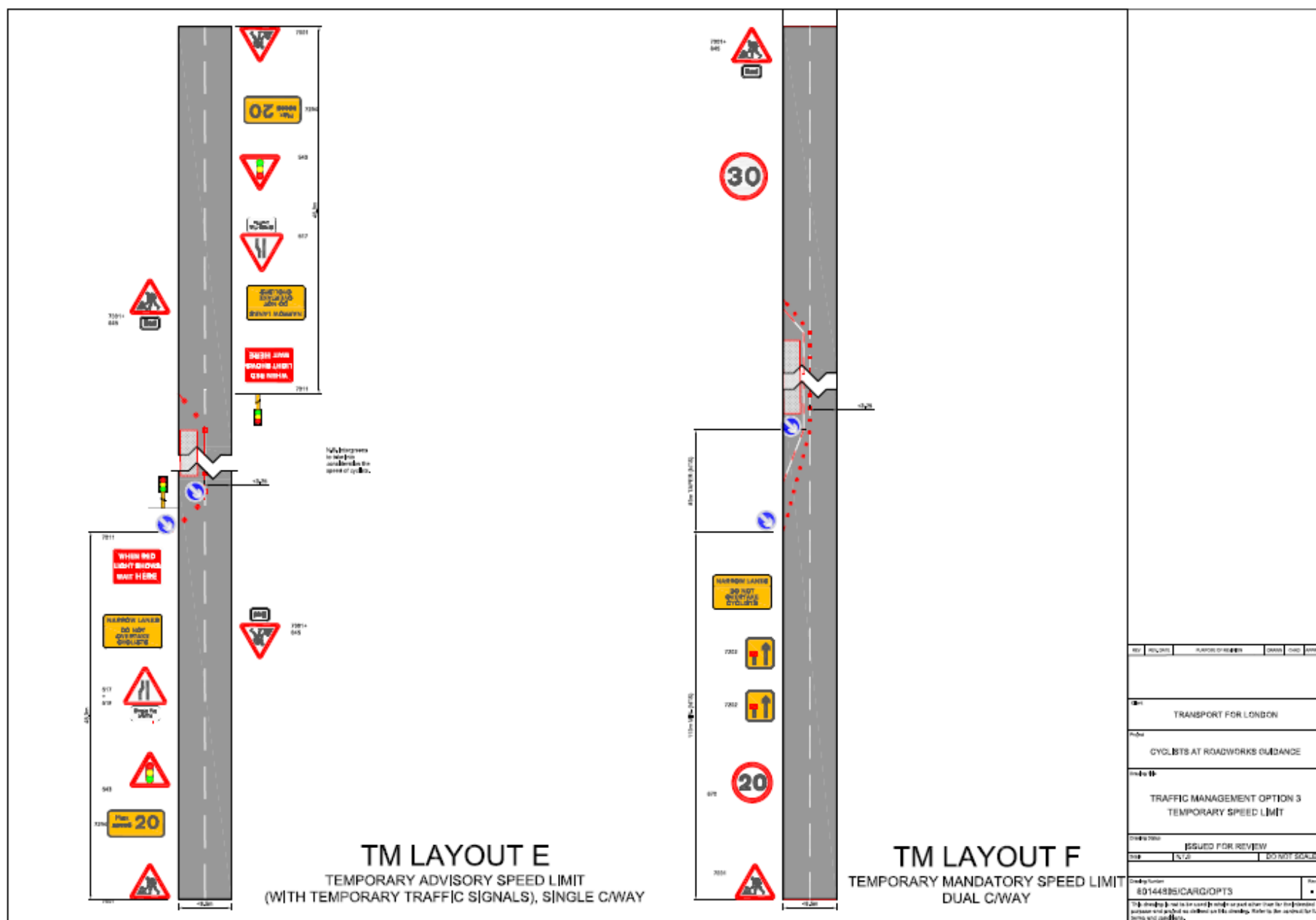
DETAIL 1
PUMP SHAPED FROM TEMPORARY (STANDARD) INTO (STANDARD)
SCALE 1:50



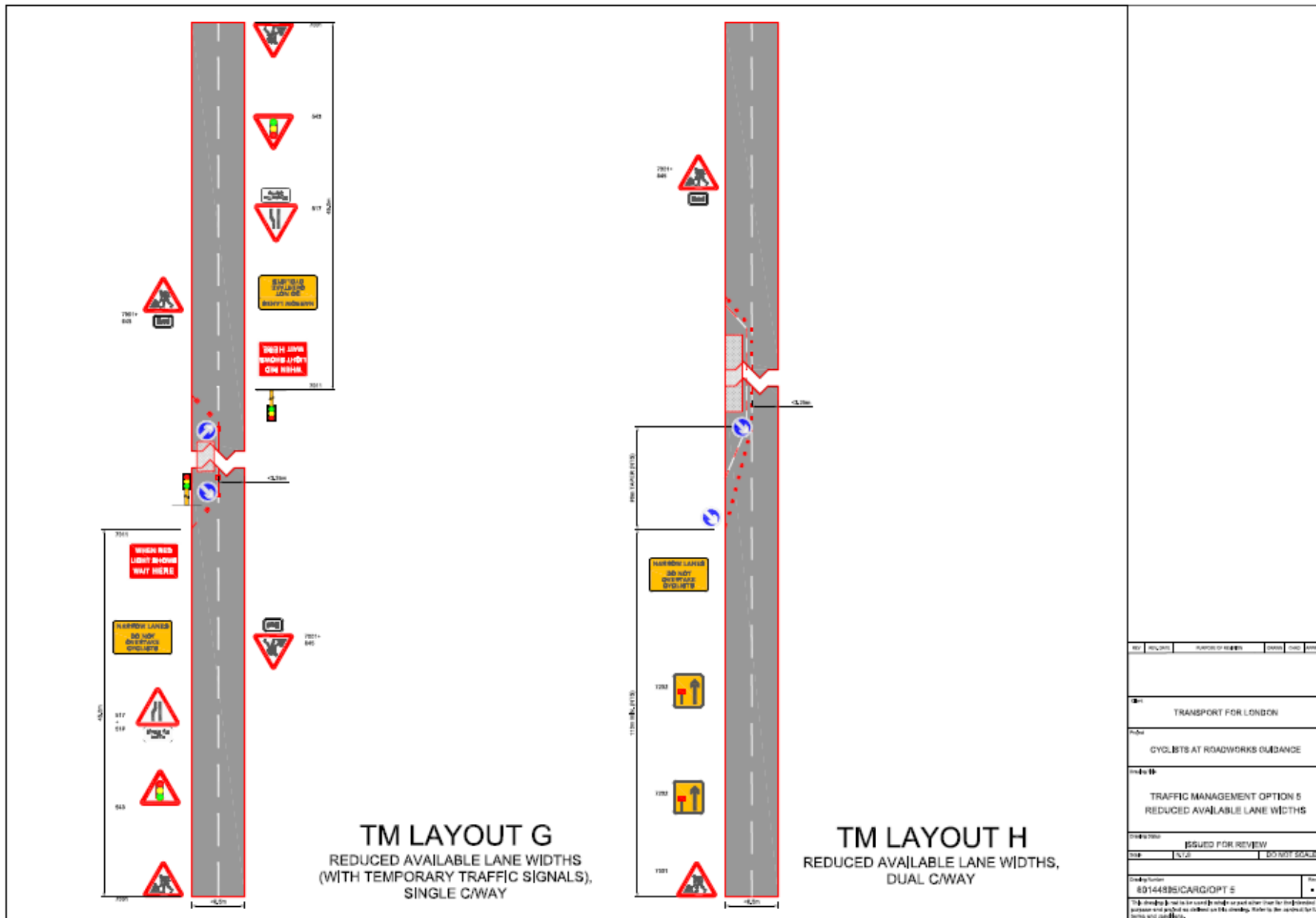
TM LAYOUT D

TEMPORARY SHARED USE FOOTWAY, DUAL C/WAY

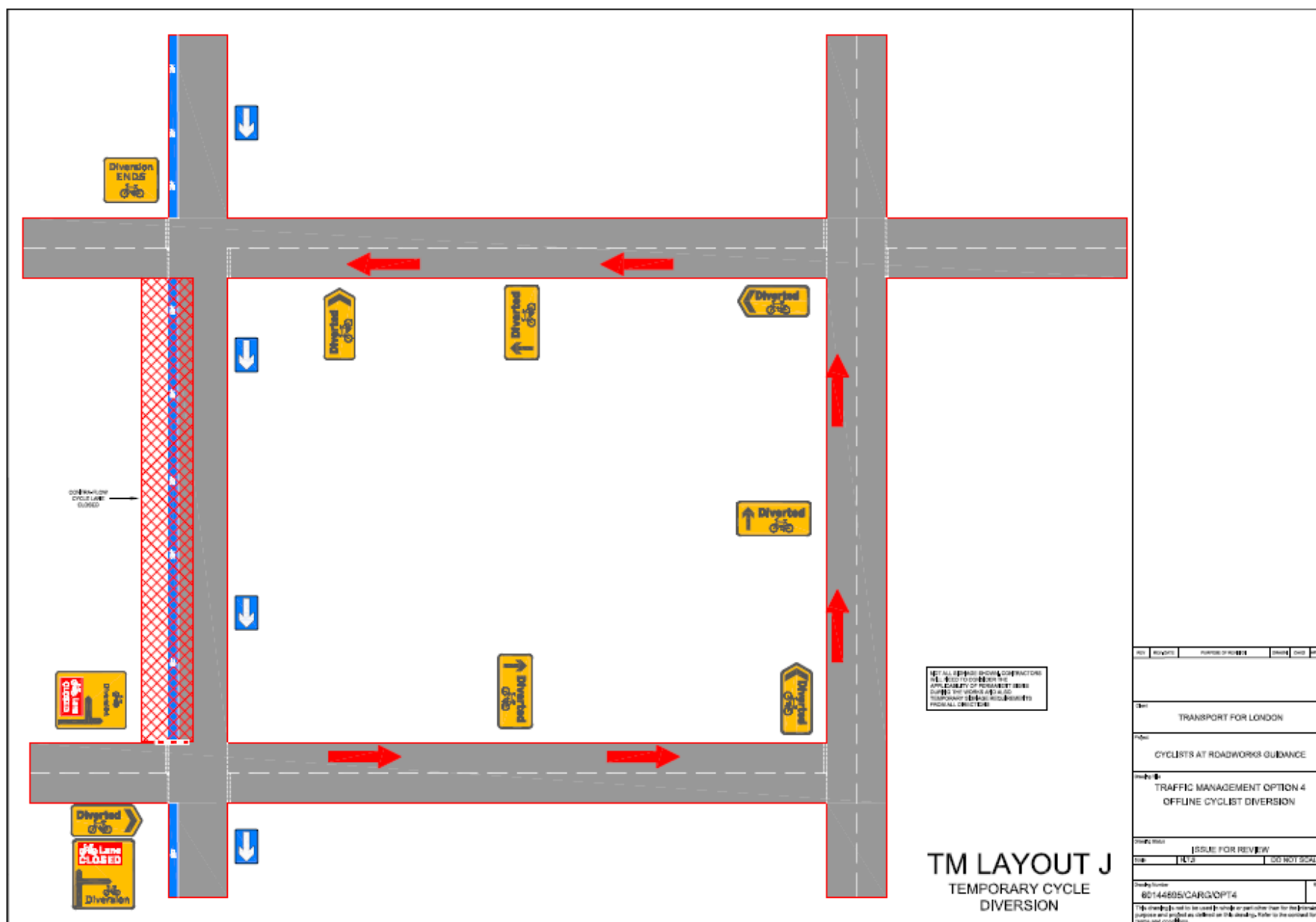
REV	REV DATE	PURPOSE OF REVISION	DESIGN	CHECK	APPROVE
1	10/10/2019	ISSUED FOR REVIEW			
TRANSPORT FOR LONDON					
CYCLISTS AT ROADWORKS GUIDANCE					
TRAFFIC MANAGEMENT OPTION 2 TEMPORARY CYCLE PATH ON FOOTWAY					
ISSUED FOR REVIEW					
DATE	10/10/2019	DO NOT SCALE			
Drawing Number 80144885/CARG/OPT2					
This drawing is for use only as a guide and not a substitute for the standard for the relevant work.					



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REV	DESCRIPTION	PURPOSE OF REVISION	DRAWN	CHECKED	APPROVED
001	TRANSPORT FOR LONDON				
002	CYCLISTS AT ROADWORKS GUIDANCE				
003	TRAFFIC MANAGEMENT OPTION 5 REDUCED AVAILABLE LANE WIDTHS				
004	ISSUED FOR REVIEW				
005	N/A				
80144886ICARG/OPT 5					Rev
This drawing is not to be used for any other purpose than for the specific purpose stated on the drawing. Refer to the contract for full terms and conditions.					



Cycle Proofing Working Group Meeting

Time/Date: 11:00 – 13:00, 7th September 2017

Location: Room 2/19, Great Minster House, 33 Horseferry Road, SW1P 4DR

Attendees: Barry Austin (Chair), Nick Chitty, Duncan Dollimore, Will Haynes, Phil Jones, Paul Lavelle, Andy Mayo, Graham Titchener, Matt Higgins, Andy Pickett, John Parkin, Adrian Lord.

Apologies: Roger Geffen, Martin Key, Tim Holland.

	Item	Summary	Action/Date
1	Welcome and introductions		
2	HS2 Parliamentary Assurances to CPWG	• Hudson Taivo (HS2) talked the group through civil works contracts for HS2, team structures, cycling issues, HS2 Phase One Act, Schedule 4 – to obtain consent from highway authorities, key interfaces, undertakings and assurances (including Cycling UK assurances) • CPWG have an opportunity to influence the design process and HS2 is happy to work with the group and provide options • The CPWG can influence stage 1 design, which will last for 18 months • There are two main civil works contracts for delivering HS2. The main works for design and construction are 10 years up to 2026 • First there is an Enabling Works Contract (EWC), followed by two further contracts for station design and railway systems contracts • HS2 looking for CPWG comments on designs • CPWG recommend that HS2 enrol on UDL training, or participate in a cycle surgery to increase technical knowledge for cycling	• Hudson to circulate the slides • HS2 to provide key milestones and engagement opportunities with CPWG • CPWG to respond to assurances once received.
3	Cycling infrastructure Prioritisation Tool (CyIPT): Dr. Robin Lovelace	• Innovation Challenge Fund winning project, with funding until March 2018, when the tool should be available online to use nationally • CyIPT sees the current network and focuses on infrastructure changes required; providing an automated way of prioritising network-wide infrastructure approaches • Plugs a gap in planning between 'drawing lines on maps' and CLoS assessments: the CyIPT aims to provide an evidence base and save time • Consolidates lots of guidance, such as CROW and Highways England • Road widths are estimated, but surveys will be done to provide assurance • Includes highways, not paths and towpaths, but you can view layers that show these	• The prototype can be found here: www.cyipt.bike/map • Robin to circulate key questions for the group to consider and feedback is requested from the CPWG

		• Junctions will also be part of the tool • Robin would like the CylPT to be used by local authorities in the LCWIP process	
4	Update of LTN 2/08 Cycle Infrastructure Design	• BA presented the draft scope for tendering for work to update LTN 2/08. • CPWG provided input to the scope; suggesting that there needs to be a clearer purpose setting out the reasons for updating the guidance; • There was discussion about what would constitute an appropriate “audit tool”. • The format was discussed, with members outlining pros and cons of a web-based guide as opposed to paper format. Government restrictions are likely to influence the final decision. • BA said he hoped the draft scope would be finalised before he moved on.	BA to revise scope taking into account CPWG values. BA to determine devolved administrations involvement.
5	AOB	• BA referred to an ‘EU light segregation’ report that is in preparation, due to report in Spring 2018; • John Parkin advised that he is writing a book on Designing for Cycling to be published by the ICE; • BA notified the group that he will be moving to a new Department in a couple of weeks; • BA said his replacement will arrange the next CPWG on his arrival, which he expects to focus on HS2 and LTN 2/08 updates. • BA thanked CPWG for their unwavering support and advice.	