



Active
Travel
England

Rural Design Guide



July 2026

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Published case studies and the latest version of the Rural Design Guide can be found on [GOV.UK](https://www.gov.uk).

Case Studies

1. Keswick to Threlkeld Trail
2. St Peter's Greenway
3. A27 East of Lewes
4. Exeter Green Lanes
5. Castleford to Wakefield Greenway
6. Saints Trails
7. Kennington Meadows
8. Jersey Green Lanes
9. Lias Line Greenway
10. Strawberry Line
11. Trans Pennine Trail Warrington
12. M55 to Heyhouses Link Road
13. Mere Way (Waterbeach New Town)
14. Leigh Guided Busway
15. Beryl Burton Cycleway
16. Leeds & Liverpool Canal Towpath
17. Re-designing Rural Corridors for People, Nature and Net Zero

Foreword

At Active Travel England, our mission is simple: we want to enable more people to walk, wheel and cycle every day. We help councils give residents safe and attractive options to get about under their own steam and ensure local communities can reap the health, economic and environmental benefits this brings.

Many towns and cities are well on the way to creating these opportunities, but our mission extends beyond major conurbations; everyone in England, deserves these same cheap, healthy travel choices.

We know that, for rural communities, simple everyday journeys can be more challenging, with areas often less connected, making it harder to walk, wheel or cycle to shops, school and work. Nevertheless, there remains huge potential and desire to do so.

Creating attractive options in rural areas for daily tasks might be challenging, but it also brings new opportunities. Attractive routes through the beautiful English countryside can make rural areas a destination, boosting tourism and providing many more people the chance to experience the great outdoors.

With the publication of this Rural Design Guide, we're supporting authorities to develop infrastructure that works best for local people. Our aim is to help councils build safe and appealing routes that not only enable more everyday active journeys but also help them make the most of our wonderful countryside.

Chris Boardman

National Active Travel Commissioner





1. Introduction to this Guide

Status

This Rural Design Guide, produced by Active Travel England (ATE), provides technical guidance on planning and designing walking, wheeling and cycling routes and facilities in rural areas. This guidance is intended primarily for local authorities but can be used by anyone with an interest in making active travel an attractive option in rural areas. This could include local people making short trips to reach everyday destinations such as work, school or the shops, as well as people visiting the countryside for recreation.

Although this guidance is not a comprehensive manual for designing equestrian routes, it recommends that, wherever possible, routes should be made accessible for horse riders, particularly where there are pre-existing equestrian routes.

This guidance complements [Local Transport Note 1/20 Cycle Infrastructure Design](#) (LTN 1/20), published by the Department for Transport (DfT). It also references other guidance published by DfT, including [Manual for Streets](#), [Inclusive Mobility](#) and the [Traffic Signs Manual](#) (TSM), and by ATE, including its various toolkits and advice notes.

This guidance builds on LTN 1/20 and explains how its principles can be extended to rural areas, to enable people to walk, wheel and cycle. It also updates some aspects of LTN 1/20 in the light of experience and to cover developments in active travel infrastructure design since it was published in July 2020.

The guidance does not change any of the core principles of LTN 1/20 or any other government guidance.

1.1 Coverage

The content of the guidance covers the planning and design of routes that are usable by all active travel modes, since routes in rural areas should enable people to choose the means of travel they find most useful and attractive.

1.2 Application

The guidance has been written for application in rural areas in England, which is defined in general terms as:

- hamlets, villages and small market towns
- the countryside between them

The guidance does not seek to make a precise definition of rural areas. People involved in planning and designing active travel routes can use the parts of this guidance that are relevant to them.

It may also be applied to locations within urban areas that are similar in character to the countryside, such as country parks, canal towpaths, disused railway lines and the urban fringe.

1.3 Structure and summary of guidance

In general, this guidance has been structured in a similar way to LTN 1/20, expanding and clarifying how each chapter in that document should be applied in rural areas and to walking and wheeling.

In some cases, information is provided which updates that given in LTN 1/20.

For technical diagrams, all measurements shown are in metres unless stated otherwise.

The structure includes:

Chapter 2, Rural Active Travel in Context gives an overview of the context and patterns of trip-making that take place in rural areas, the opportunities that exist for improving and creating active travel routes and the benefits of enabling more people to walk, wheel and cycle.

Chapter 3, Scheme Development

Process describes a generalised process for the development of ideas, objective setting, optioneering and delivery stages of active travel schemes. It also outlines the wider economic benefits associated with increasing active travel.

Chapter 4, Design Principles and Audit

Processes sets out the five core design principles that apply to all active travel schemes. It includes guidance, updated from LTN 1/20, on when pedestrians and cyclists should be separated from motor traffic. It sets out factors that should be considered when deciding whether to separate pedestrians from cyclists or provide shared use, and whether to provide specific facilities for horse riders. It includes guidance on the relative inclusivity of key design choices and a summary of the most common audit processes that are applied to active travel schemes.

Chapter 5, Geometric Requirements

builds on the information in chapter 5 of LTN 1/20 by giving geometric parameters for a greater range of user types. It includes a series of indicative cross-sections for shared use paths. Guidance on gradient and sight distances for cycle routes has been updated from LTN 1/20.

Chapters 6, 7 and 8 contain guidance on the three principal ways of creating and improving active travel routes in rural areas:

- **along busy roads and railways**
- **on quiet country lanes and streets**
- **via motor traffic-free routes**

All have their advantages and disadvantages and there is no set preference. Routes between and within places can be made up of any type of provision, including in combination, as long as the quality of each section and the transitions between them (Chapter 9), crossings and junctions (Chapter 10), and wayfinding (Chapter 12) meet the required standard.





Chapter 6, Active Travel Routes along Busy Roads sets out options for active travel routes alongside main highways, both within and beyond the existing highway boundary, as well as updated guidance on roads with advisory cycle lanes (updated from LTN 1/20). It includes information on how to achieve desirable noise levels.

Chapter 7, Quiet Mixed Traffic Lanes and Streets explains how designers can achieve suitable conditions for walking, wheeling and cycling where there is no separation from motor vehicles. It covers both the control of traffic volume and traffic speed using physical and non-physical methods. Typical cross sections for quiet country lanes are included.

Chapter 8, Motor Traffic-Free Routes expands on the similar chapter in LTN 1/20, describing in more detail the different types of route and their key considerations. It outlines the pros and cons of different surface materials, access controls, issues of personal security, lighting and nature/biodiversity principles.

Chapter 9, Transitions provides guidance on how transitions between different types of provision can be achieved in rural areas. It also expands on the information in LTN 1/20 on transitions between different types of cycle route which can be applied to all areas.

Chapter 10, Crossings and Junctions sets out parameters for selecting crossings that apply in all settings, updated from LTN 1/20. It includes design requirements for uncontrolled and grade-separated crossings, as well as provision at major junctions. Recent examples of junction treatments are included, building on the information in LTN 1/20.

Chapter 11, Features in the Rural Landscape gives guidance on features that enhance the experience of walking, wheeling and cycling in rural areas, including capitalising on local landmarks and viewpoints, play areas, planting and facilities such as cycle parking and car parking.

Chapter 12, Traffic Signs and Wayfinding gives principles for providing wayfinding information in the countryside. Guidance on the different elements which make up a wayfinding system is given, along with details of the types of traffic signs and road markings that are used in rural areas.

Chapter 13, Integration with New Developments and Major Infrastructure

explains how active travel provision should be incorporated within larger schemes. It provides a summary of current national land use planning policy, explains how ATE's statutory consultee function operates, and outlines the opportunities associated with different types of development and infrastructure projects.

Chapter 14, Detailing, Construction and Maintenance

expands on the information in Chapter 15 of LTN 1/20 with reference to rural areas, particularly in relation to off-highway and off-carriageway routes. It provides guidance on key elements including path construction, kerbing, hedgerows and gates, drainage and lighting, and how the maintenance regime is critical to the construction design choices.

Appendix A, Options for Route Creation and Improvement gives details of the legal processes associated with the creation of new routes and obtaining planning consent, as well as other statutory consents.

Appendix B, Acquiring Land and Rights discusses the pros and cons of these alternative approaches and describes the legal mechanisms available to local authorities. It also describes particular issues and common concerns associated with key landowners.

Appendix C, Rural Delivery Routemap contains more detailed guidance on the processes that may be applied to the planning and design of active travel schemes in rural areas.





2. Rural active travel in context

2.1 Chapter summary

This chapter provides an overview of active travel outside of urban areas – as a means of transport, physical activity, leisure and tourism. It explores the strengths, weaknesses, opportunities and threats in relation to rural active travel, providing context for Chapter 3, where approaches to building cases for rural active travel schemes are outlined.

While many issues associated with car use (such as congestion, air quality, health impacts) are common across urban and rural contexts, there are specific rural issues such as social isolation and limited access to services, employment and education.

2.2 Rural context

Nearly 10 million people, close to 17% of England's population, live in rural areas, according to [official statistics](#).

This is defined using the Government's classification of rural as areas exclusive of settlements with populations greater than 10,000 residents.

The population within these areas has a higher average age than in urban areas, so supporting residents' ongoing mobility and ability to live within these communities is important.

Disabled people of all ages face limited travel options in rural areas. Designs must reflect mobility, sensory, cognitive and energy-limiting conditions.

Safety is a significant barrier which prevents women and girls, amongst other users, from using active travel, particularly after dark, and their differing journey types and access requirements also need to be taken into account.

Rural populations are increasing and diversifying, and so active travel networks need to enable access for all, at every life stage, to appropriate facilities and services.

Other opportunities for active travel development in rural areas include:

- **increased walking and cycling for leisure, post-pandemic.** In the years following COVID-19 lockdowns, the third most common trip purpose reported in the [National Travel Survey](#) is “other including just walk” for English residents, with an average of almost one trip per four days.
- **increased distances being walked, wheeled or cycled each year.** People are walking, wheeling and cycling more, and travelling further, with distances increased by 50% since 2019. Cycling distance is still increasing, with a 12% increase recorded between 2023 and 2024. These findings support the potential for increased active travel in rural areas, where distances to destinations are often greater.

This presents an opportunity to provide infrastructure that enables people to take coherent, direct, safe, comfortable, attractive and accessible routes for walking, wheeling, cycling and, where appropriate, horse riding.

2.3 Characterising active travel in rural areas

The [2023 National Travel Survey](#) highlights the difference between modal shares in urban and rural areas. Walking and cycling journeys in rural areas account for 23% and 1% of trips made respectively, compared with 29% and 2% respectively in urban areas.

While people living in rural areas travel further, longer and more often than people in urban areas, rural trips of less than five miles still accounted for 60% of all trips and 11% of all miles travelled per person.

This compares with 71% of all trips and 17% of miles travelled England-wide. With half of these short rural trips being made by car, there remains significant opportunity to enable more of these journeys to be undertaken by walking, wheeling and cycling. This will bring benefits for congestion, air and noise pollution, and reduced car parking pressure.



2.4 Rural active travel opportunities

The opportunities arising from investment in active travel extend well beyond the immediate benefits of more people walking, wheeling and cycling.

Improve public transport accessibility

Walking and cycling are key ‘first or last mile’ components to and from bus stops and train stations.

New and improved active travel connections within and between settlements provide better access to bus and rail networks, particularly where roads are unsuitable for buses to access smaller settlements directly. Investment in active travel facilities and mobility hubs can address some of the challenges of first and last mile mobility in rural areas.

This can be larger scale, for example through the provision of a new walking, wheeling and cycling route along a former railway alignment to connect to existing transport hubs and rail stations. It may also be smaller scale, such as the provision of a crossing point over a road or the provision of a footway along a lane to a bus stop.

Support sustainable growth of places

Vision-led approaches to development planning require the consideration of pedestrian and cycling movements first. Both the [Highway Code](#) and [Manual for Streets](#) include the Hierarchy of Road Users, which emphasise the importance of protecting vulnerable road users. This principle should be considered when developing routes in rural areas, particularly where people walking, wheeling and cycling are sharing space with motor traffic.

Investment in active travel can unlock development by improving access and connectivity, helping communities to grow. New housing can help retain and attract workers who sustain local services.

[Research shows](#) that people walking, wheeling and cycling to shops spend more money than those arriving by car, and that pedestrianised and attractive town centres experience higher sales.

[Evidence shows](#) that new housing tends to attract more young families which can help increase the number of working age residents. Non-residential development delivers services and facilities which may reduce the need for communities to travel long distances to access services.

Support an ageing population

Supporting more active lifestyles within rural communities can help people maintain mobility and independence. This can be particularly relevant where older people stop driving, either by choice or due to medical reasons, which may reduce access to services and increase the risk of loneliness.

Infrastructure designed to meet cyclists’ needs can also improve access for mobility scooter and wheelchair users. The availability of e-bikes and adapted cycles can enable some people to cycle further and for longer across a wider range of routes.

[Research shows](#) that cycling in later life improves physical and mental health, and cognitive ability. More housing in rural areas can provide more opportunities for care workers and medical staff to live and work in rural areas where recruitment into these sectors is particularly challenging.

Safety, particularly after dark, is also important for older people.

Enhancing existing networks

Rural areas typically feature networks of road and paths that have been established over centuries and reflect the evolution of transport modes.

Where there is more than one motor vehicle route between settlements, relatively low-cost interventions utilising traffic regulation orders and access controls can deliver improved conditions for active travel.

Other modest interventions which can lead to significant improvements to rural active travel networks include the removal of barriers and improvements to surfacing and drainage. The delivery of short sections of new routes can address missing links in the active travel network and unlock longer or more recreational routes, quickly delivering conditions which enable most people to walk, wheel or cycle or more safely undertake recreational activities such as jogging or hiking.

People riding horses should not be purposefully excluded from rural active travel routes through inattentive design. Traffic-free paths and quiet country lanes can also be attractive and safe for horse riding as well as walking, wheeling and cycling. In this way new active travel routes may fill gaps in the existing equestrian network improving their safe access to the countryside.

Elsewhere, improvements to the active travel network may be along routes on which pre-existing rights for equestrian travel exist. As such, horse riders are generally considered throughout this document as potential users of any proposed route, although it may not always be possible to accommodate their needs on all new facilities.

For traffic-free routes, this document focuses on how byways, bridleways, footpaths and permissive routes should be built, maintained and utilised to form part of an active travel network. It does not stipulate how to build safe and coherent networks for equestrians, but does provide guidance on how to enable them, where safe and appropriate, to use active travel routes. Principles for the design of paths shared between people walking, wheeling, cycling and equestrians are given in Chapter 4.

Delivering placemaking enhancements

Measures to manage and slow the movement of motor vehicles within settlements can help improve conditions for people walking, wheeling and cycling. They can enhance the public realm, creating an improved setting, for example to reflect the heritage of historic buildings and provide space for events. Further guidance on the design of streets in rural settlements is given in Chapter 7.

Active travel schemes can incorporate modal filters, or width or weight restrictions, to address issues around high volumes of traffic, including heavy goods vehicles (HGVs), following sat navs down country lanes. They can also be designed to improve the movement of livestock and agricultural vehicles and enhance access to green space for residents and businesses.

Improving access to green and blue space is a government priority and improving active travel routes is just one of the ways we intend to do this. The upcoming updated Environmental Improvement Plan (EIP) will feature more detail on the Government's plans for improving access to nature.



2.5 The rural Public Right of Way network

In rural locations, active travel routes are important destinations in their own right, because they provide access to natural landscapes. They are not just a means of accessing other destinations as part of a general-purpose trip.

Many of these routes could be formed from the Public Right of Way (PRoW) network. Selecting route typologies to upgrade or create is a key focus of the optioneering process, detailed in Chapter 3.

In many places rights of way are likely to require improvements to make them suitable for as many people as possible. It is important that upgrades designed to benefit some users are not made at the expense of others and consideration is given to wider impacts, including for example the status of public rights of way.

2.6 Inclusive design for all users

The countryside should be accessible to all, through as many means as possible. It is important that the differing design requirements of each user are considered. The Department for Transport (DfT) uses [transport user personas](#) as a way of considering some of these diverse needs, and there is detailed guidance for advice on designing accessible pedestrian environments in [Inclusive Mobility](#). Safety and perceptions of safety are also an important factor in encouraging many under-represented groups, and particularly women and girls, to use routes.

All routes should be designed to be accessible for as many people and user groups as possible. An Equality Impact Assessment is strongly recommended for any proposed design, as discussed in Chapter 4. These choices should be influenced by the objectives set for the scheme, which should stem from decisions relating to the key users of the scheme. This process is detailed in Chapter 3, with Chapter 4 giving further guidance on the inclusivity of key design choices.



3. Scheme development process

3.1 Introduction

This chapter, and accompanying Appendix C, sets out a suggested process for delivering a rural active travel route or place-based intervention. This is called the Rural Delivery Roadmap (RDR). It sets out steps from initial ideas and concepts, through establishing a case for change, to site appraisal, objective setting, development and consideration of options and delivery of the chosen solution. The RDR brings these requirements together in a cohesive, streamlined approach to scheme planning.

The RDR is intended to be applied flexibly. The tables overleaf set out the key steps which should be included within a light-touch application of the RDR.

3.2 Process – Key steps

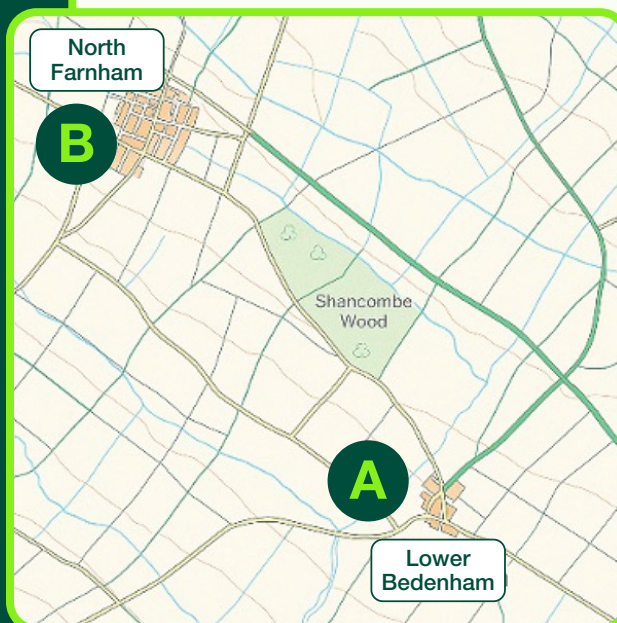
The process is summarised below and full details are set out in Appendix C.

Objective setting

Inception

The project promoter should set out the reason for starting this project, what challenges or issues they are seeking to overcome and what success will look like. The project might stem from a community request, a funding opportunity or a development project, and this in turn could influence the project requirements. It would be useful to relate the problems tackled by a project to local or national planning policy.

In the fictional example, Lower Bedenham Parish Council is seeking to provide a new route which will allow residents to access the local primary school, shop and pub in North Farnham which is around 1.5 miles away.



Background and scoping

The second stage is to define the study area, collect data and organise it in a way that will be beneficial at later stages. For simple schemes, information could be displayed on local scale mapping and/or in a short technical note.

These elements can influence, or be influenced by the project. Information can range from an understanding of the existing movement network including PRow and permissive routes, spatial arrangement of land uses, geographical and environmental conditions, historic features, local assets, planning designations, current and future travel behaviours, and development schemes.

Consider who the wider stakeholders should be engaged with as the project develops.

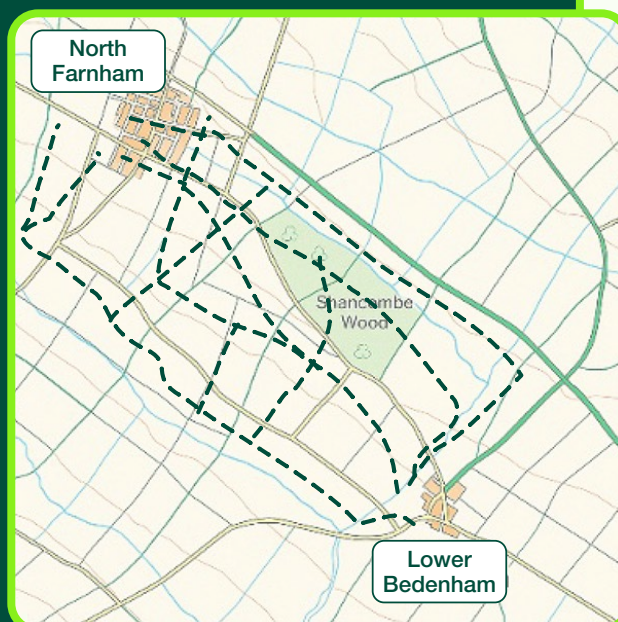


Demand and opportunity mapping

The assessment of current conditions and potential route options needs to account for key users, including inclusive engagement with disabled groups and with women and girls around safety and route choice. These are often the groups that will derive the most benefit from a successful scheme. They may not be the current users of any existing route.

Using the information collected and local knowledge, identify gaps in the movement network. These may result from a lack of suitable walking, wheeling and cycling provision along main roads. These could relate to the conditions of PRow or features in the landscape which cause severance. Gaps may be more or less significant to key users.

Carry out a high-level network planning exercise to identify key desire lines and consider how these relate to geographical, environmental, historical features, which groups will benefit most, and how safe they will feel.



Defining objectives

The final stage of objective setting takes the findings from the previous stages and appraises the benefits, risks, constraints and dependencies of developing an active travel scheme.

Together these will form a robust 'case for change'.

The intention of the objectives is to guide the development of the scheme to the one which delivers the most benefits. They are intended to inform optioneering and subsequent planning and design decisions.

Objectives are intended to be dynamic and can and should be revisited, and potentially updated, throughout the process.

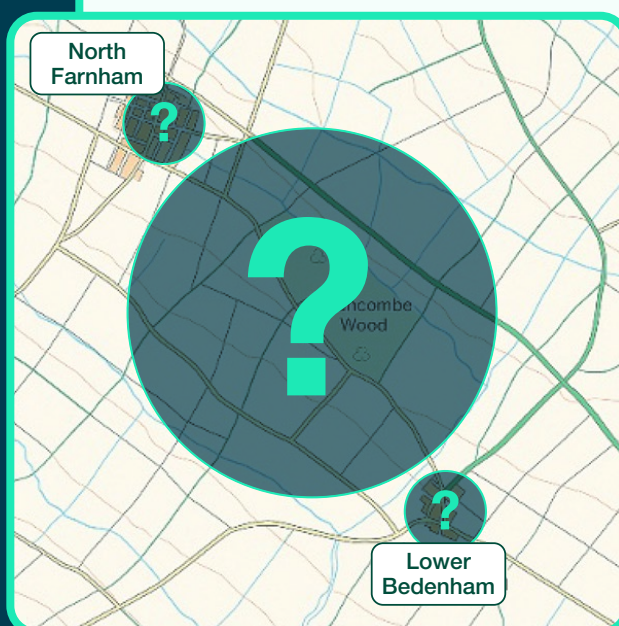


Optioneering

Determining scheme type

Using the work completed in the initial stages of the RDR, an appraisal is needed to understand whether this should be an area-based scheme (improving within a place such as a town or village) or whether this is a network-based scheme looking to link two or more places. The complexity of a scheme also needs to be considered.

Appraisal should be proportionate to the scale of the scheme proposed. Simple schemes with a single, obvious solution to a non-complex problem will require a much lighter-touch appraisal process with far fewer options considered. Note that network-based schemes will usually be more complex than place-based schemes, even if they only include a single link.

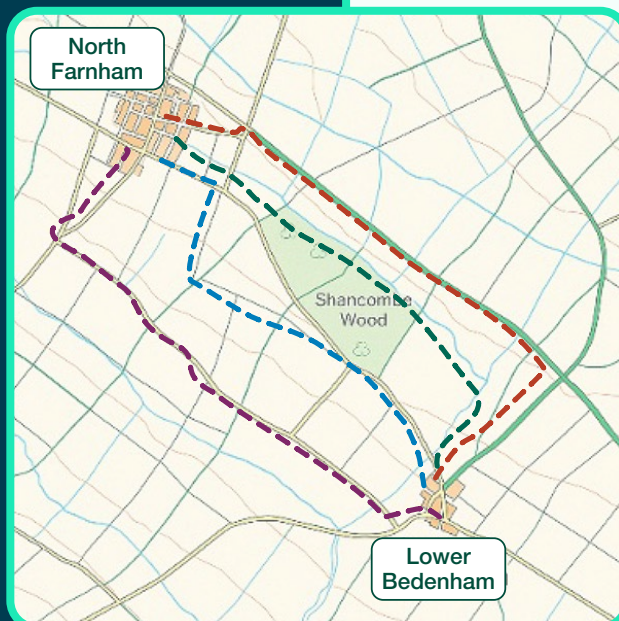


Developing initial route options

Based on the scheme objectives and the wide range of baseline information collected and assessed, potential route alignments should be considered for network-based schemes. These could consist of routes within the public highway, routes along PRow, the creation of new routes or a combination of all these.

With community support, it may be possible to begin early discussions with landowners to gauge their openness to options crossing their land.

Undertake a feasibility assessment of each considering a range of criteria. Identify gaps in data or knowledge that need to be filled through surveys or stakeholder discussions.



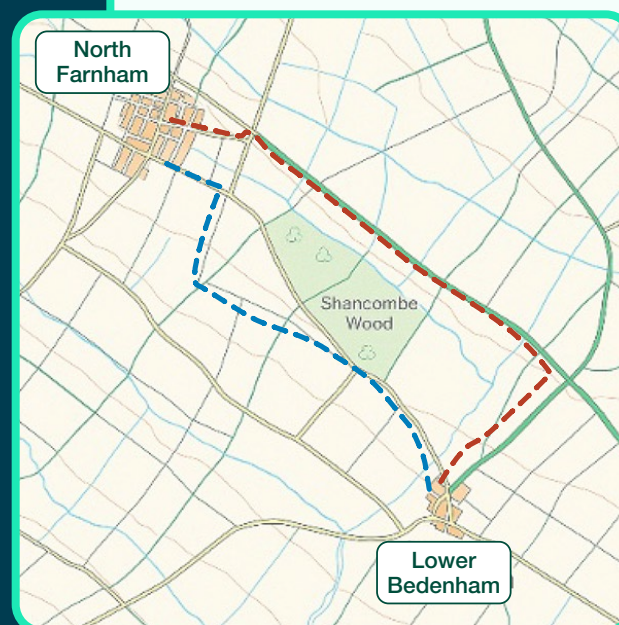
Route selection

A multi-criteria analysis (MCA) should be carried out to support route selection. This process helps narrow down potential solutions by considering the performance of each option against criteria which are decided by the project team but may also be influenced by stakeholders.

The MCA should consider a mix of practical considerations (deliverability, cost, safety, attractiveness, directness) along with policy considerations, the wider project objectives and any funding constraints.

The MCA should identify the best-performing route or routes to be shortlisted for development.

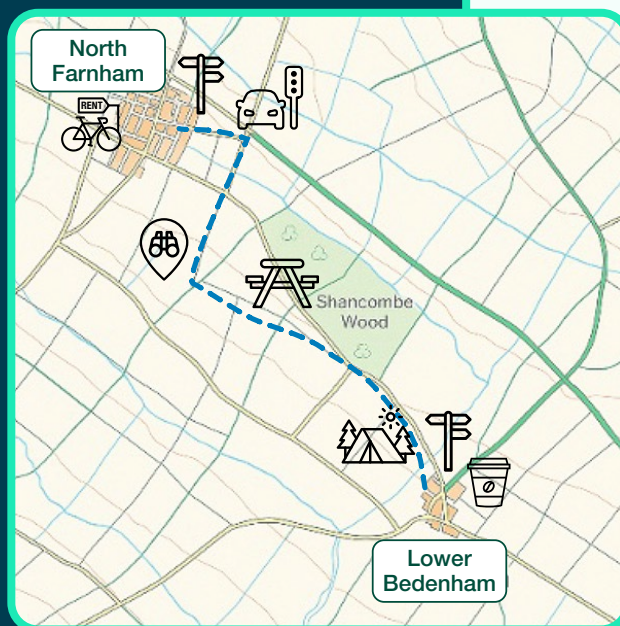
Specialist technical advice should be sought to allow concept designs to be drafted.



Developing the offering

With concept designs for one or more routes in preparation, it is important to consider additional benefits a scheme could deliver through the introduction of additional features along the route, the realignment of routes to capture the maximum value of existing features within the landscape, and complementary measures that could increase the benefits of the scheme. These could include the introduction of cycle hire and mobility scooter hire facilities, cycle parking at key destinations, car parks to enable access to the route, or cafés or kiosks along the way.

Engagement with the community, stakeholders and landowners is vital at all stages, but particularly crucial at this stage. Specific engagement around safety is also essential.



3.3 Developing the business case

The need and level of detail for a business case will normally depend on the source of funding for the scheme. Further guidance on how to estimate economic impact from the scheme is detailed in Appendix C. Whether a business case is required or not, the steps outlined in the RDR are recommended as a means of testing the suitability of a scheme.

For rural active travel routes in locations with small populations, significant latent demand for utility active travel may be hard to establish. The RDR therefore aims to support practitioners in understanding wider principles which underlie value for money and maximise the potential community benefit.

The appropriate level of detail will vary depending on the scheme proposed, and designers will need to use their judgment to determine the exact approach. Professional judgment is required to determine the exact approach to be taken. As well as ensuring the optimal solution is pursued, the process is intended to identify and adapt to any potential barriers to the successful delivery of the scheme.

The remainder of this chapter summarises the principal non-transport economic benefits that can result from investment in active travel in rural areas.

Enhancement of the leisure and tourism sectors

Rural areas are important destinations for people walking, wheeling, cycling and horse riding for recreation.

The appeal of the British countryside for leisure and tourism trips means that the visitor economy can contribute substantially to the business case for a scheme.

[VisitBritain](#) has identified that more than 80% of UK adults plan to have at least one holiday in the UK per year, a high proportion of which are likely to include outdoor pursuits in rural areas. Furthermore, 57,000 inbound (international) tourist visits in 2023 included cycling in some form, 'bringing in' £63 million annually. When combined with walking tourism, active holidays could be a key growth area for foreign tourism and a targeted means of stimulating regional development.

[CyclingUK](#) estimates that annual average spending for cycling and mountain biking day trips was estimated to be £302 million with a further £119 million from domestic trips with overnight stays, and £99 million for overseas visitors, making a total of £520 million. Data from VisitBritain, the Great Britain Tourism Survey (GBTS), and Great Britain Day Visits Survey (GBDVS) identified that cycling or mountain biking was the sole reason for 28% of respondents for day trips and 15% of respondents for trips with overnight stays.

This economic potential from attracting more overnight visitors is also a benefit. Their spending on accommodation, food and drink and other sectors such as retail and entertainment (typically £58 to £111 per person) is significantly greater than those of day visitors (typically £13 to £21 per person).

The regional tourism industry is important for local employment. [Research](#) estimates an average of 11.8 FTE jobs are created per million pounds turnover for overnight stays, and 11.6 FTE/£ million for day trip. Visitor expenditure feeds through to local salaries and suppliers, increasing employment levels. This will then return to the community through increased general spending. This produces a multiplier effect on the wider economy, typically expressed as a ratio of the total benefits to direct benefits.

For tourism related to rural active travel, [research](#) has estimated a multiplier value between 1.5 and 1.8. Direct benefits were counted as through hospitality and retail with indirect benefits associated with health and carbon savings when compared with other leisure and tourism activities.

Wellbeing benefits associated with rural active travel schemes

Rural areas are well placed to take advantage of the benefits associated with access to green spaces and other unique features of the landscape, and the physical and mental health benefits this attracts.

One such means of assessing the benefits of rural active travel has focused on 'non-cash releasing monetisable benefits', referenced in business case guidance. [The Outdoor Recreation Valuation tool \(ORVal\)](#) estimates visitor numbers and welfare values of outdoor green spaces in England from a statistical model of recreational demand based on research from Day and Smith (2018), and was developed by the University of Exeter for the Department for Environment, Food and Rural Affairs (DEFRA). It can be used to predict visitor numbers or uplifts, although not international visitors. It then produces a monetised welfare value from this which can be considered as a 'willingness to pay' metric. Associated values are based on income and travel costs and they are made relative to not making the trip.

A recent assessment of ORVal outputs from a selection of national trails, including Offa Dyke's Path, the North Downs Way and Pennine Bridleway, gave outputs of £35,700 per kilometre to £158,000 per kilometre.

Similarly, [Historic England](#) estimates the wellbeing value of day-to-day encounters with cultural heritage in England is £29 billion, with people gaining on average equivalent to £515 from their local heritage. The research produces an estimate for Wellbeing-Adjusted Life Years (WELLBY) resulting from living near cultural heritage sites. The mean WELLBY value for the population was £13,000 in 2019 prices, and each additional heritage asset with a 1km radius increased the average WELLBY by £15.85. Guidance on how to appraise wellbeing can be found in the [HM Treasury Supplementary Green Book Guidance \(2021\)](#).

Building a network of ancillary services

The development of complementary or ancillary services, for example food vendors, retail opportunities, and cycle parking, are known to increase active travel in rural areas. Integrating a broader network of ancillary or complementary services could be achieved through engaging with local businesses. For example, local cycle hire providers could be encouraged to run pop-up facilities at key locations on a route such as trail car parks or beside rural train stations.

Longer-term ambitions could centre on the development of the tourism offer for longer-stay visitors. From building up a portfolio of ancillary services, a natural progression could then be made to features that facilitate overnight stays such as campsites.

Provision of 'all terrain mobility scooters' could be promoted, particularly where disabled people have been specified as key users. Forestry England has an [interactive map](#) of existing vehicle hire sites in rural locations on their website.

Food and drink premises offer an opportunity to turn a walking, wheeling or cycling leisure trip into a more rounded experience. For example, this could involve working with local businesses to gauge interest in setting up a café at an appropriate site on the route. There could be scope to develop this offering further as an informal, outdoor community space, seating or picnic area.

As well as encouraging new services, it may be beneficial to offer support to existing local businesses to help them adapt to increased pedestrian and cycle numbers. This could include adding cycle parking, locker facilities, or sufficient parking for horse boxes.

Commercial active travel

Promoting active travel for commercial purposes is another way to enhance economic benefits for routes that are predominantly for utility trips, or place-based schemes.

The use of cargo-bikes for short- to medium-distance commercial trips does not need to be limited to urban locations. Depending on the type of business, produce could be delivered between settlements using new or enhanced active travel routes. Trips may be conducted between rural businesses or to residences or settlements.

Route branding

Branding a rural active travel route can be effective in attracting visitors, particularly from further afield. Any brand should be closely aligned with the place appraisal work conducted as part of the initial background and scoping. Brands can then be developed such as through wayfinding design (see Chapter 12) and other features of the travelling landscape (see Chapter 11).

Examples of branding types include:

Historical

- for areas rich in historic sites, good practice can be seen at locations such as the Centurion Way between Fishbourne Roman palace, or Hadrian's Path in the area of Hadrian's Wall. The Borders Abbey Way connects various rural villages in the Scottish Borders passing by the sites of four 12th century abbeys
- branding should take inference from the historic significance of the area. For example, the Viking Coastal Trail in Kent where Vikings first arrived in England, and the Chalfont Baume Path in Buckinghamshire, which uses the original Roman name

Geographical

- coastal, woodland or geological routes, such as the Cumbria Coastal Way which connects Barrow-in-Furness to Morecambe Bay. The Sandstone Way connects numerous settlements along its 120-mile distance through a landscape dominated by sandstone rocks dating back approximately 330 million years

Scenic

- National Landscapes, sites of special scientific interest (SSSIs), special protection areas and special areas of conservation, such as the Daffodil Way through the Forest of Dean and the South Downs Way through the South Downs National Park

Heritage

- market towns, villages, old railway lines, canal paths, and traditional pubs, such as the Railway Trail in Hardcastle Crag near Hebden Bridge which links former cotton mills and remnants of the Blake Dean railway tracks. The Greenwich Meridian Trail was inaugurated in 2009 to coincide with the 125th anniversary of the Greenwich Meridian and follows the line of the Prime Meridian from East Sussex to East Yorkshire. It promotes car-free connections to a number of heritage visitor sites

Figure 3-1: Example of a small National Trust site connected by the Greenwich Meridian Trail and South Downs Way.



Credit: National Trust

A clear brand is important for geotagging, which is the attachment of a geographical reference to a digital product. This is a new and free means of publicising a route through users sharing photos and videos on social media. This can help to spread interest in and awareness of the route and therefore influence demand.

Promotions and marketing

Consideration should be given to how schemes are promoted, to help assess future demand and contribute to demand. Marketing a location as attractive for active travel has a clear and direct impact on the visitor economy.

There are many channels available for promoting a scheme as part of an overall tourism offering. Options should be explored with the local tourism board and other public or third sector partner organisations that are working to promote local tourism. They may already have an extensive online presence where information and imagery on local attractions can be drawn on to complement the overall offering. Physical promotional material such as leaflets and flyers could be considered as an option, through tourist information centres and other outlets.

Other trail websites, private tour operators or local businesses may also be interested in promoting the route. Engaging with key user groups, including local cycling and walking groups, disabled user groups or equestrian groups at frequent opportunities will be vital to obtaining their agreement to promote the scheme through their communications channels.





4. Design principles and audit processes

4.1 Introduction

Schemes to improve walking, wheeling and cycling in rural areas should meet the five core design principles in LTN 1/20 and be designed and delivered in a way that enables public bodies to comply with the Public Sector Equality Duty (PSED).

It is particularly important that rural schemes reflect and enhance their surroundings, both within and beyond settlements. Where routes are within highways, designers should consider whether people can safely mix with motor vehicles or whether they should be separated. Where rural routes are separate from motor traffic, pedestrians and cyclists can more easily share space because use is usually lower than in urban areas. The role of equestrians in rural environments should also be considered. Each case should be considered on its merits.

4.2 Core design principles

The five core design principles that underpin planning and designing for cycling in LTN 1/20 apply to all active travel modes in both urban and rural areas.

Provision for active travel should be:



Coherent



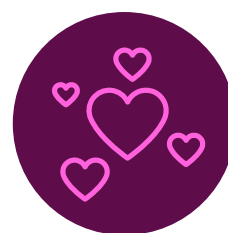
Direct



Safe



Comfortable



Attractive

Local authorities are bound by the PSED in exercising their functions, including the provision of active travel routes. This means taking into account the impact of proposed designs on people with protected characteristics under the Equality Act 2010 – see in Section 4.8.

Below is an outline of how each of the five principles can be met within a rural context.

- **coherent** – the rural network may have multiple different types of routes between places (such as where a quiet country lane links two routes with no motor traffic). It is important that users understand how these sections form a complete route to the place they want to reach. Good wayfinding is particularly important for this – see Chapter 12
- **direct** – routes should be as direct as possible. This is especially important where the route enables people in rural areas to make everyday journeys to work, education or public transport hubs. Directness may mean following the same corridor as motor vehicles, as this will typically have taken the easiest route through the landscape. Where most journeys are for leisure, it may be appropriate to prioritise other principles over directness by following off-highway routes or country lanes

- **safe** – maintaining actual and perceived safety is both a statutory duty for local authorities, and is crucial to enable people to walk, wheel, cycle or horse ride in rural areas. Routes along busy highway corridors will probably encounter higher traffic speeds than in urban areas, so providing separation from passing traffic and safe crossings is vital – see Chapters 6 and 10.

Social safety is also important. This is particularly true for women and girls but also improves access for other marginalised groups. Routes should be designed with safety in mind from the start and provide, where possible, passive surveillance and opportunities to leave the route if people feel unsafe. Lighting can contribute significantly to a sense of safety, and may be important where a route is used for commuting, school or care-related journeys which may have to be undertaken after dark in winter. However, this requires balancing between the needs of protected groups and the practicalities of providing rural lighting, any local dark sky policies and minimising impact on wildlife – see Section 4.4 and Chapter 14

- **comfortable** – routes should enable people to travel with minimal effort and be wide enough so people can travel in pairs or groups and pass others travelling more slowly. This will typically require a bound surface of adequate width so routes can be used all year round with minimal maintenance. This also makes routes easier to use for a wide range of users, including those with limited mobility and those accompanying children. There may be concerns about the urbanising effect of paved paths, but this can be addressed through the careful choice of materials and will normally result in significant cost savings over the full life of the path – see Section 4.7 and Chapter 15
- **attractive** – people will only choose to make active travel leisure trips in rural areas if they enjoy the experience, and much of this will come from the attractiveness of the route. Designers should look for opportunities to enhance the experience of walking, wheeling, cycling and horse riding through the countryside by protecting and enhancing the landscape setting, incorporating attractive art and other features, and capitalising on views – see Chapter 11



4.3 Designing for place

Designing to sensitively suit the characteristics of places is particularly important in rural areas.

Where people walking, wheeling and cycling between settlements are travelling within the natural landscape, they can appreciate the environment through both long-distance views and close-up study. Within settlements, many rural places are characterised by historic buildings and streetscapes, with streets that long pre-date the invention of cycles and motor vehicles.

[Manual for Streets 2](#) and [Traffic Signs Manual](#) (TSM) Chapter 1 both advise minimising the environmental impact of highway infrastructure in rural areas, where the inappropriate and excessive use of kerbing, signs, road markings and street furniture can urbanise the environment.

Ensuring routes are not just functional but engaging allows them to become more distinctive and legible. The more attractive an active travel route is, the more people will use it.

Applying placemaking principles to active travel routes requires a thorough understanding of the local context, history, uses, activities, and movements. It is therefore important to engage with the local community, who know this best.

Designers should consider a collaborative placemaking strategy: this not only helps designers understand the place but helps enhance a sense of community, belonging and ownership, resulting in interventions that are popular and long lasting.

4.4 Inclusivity of key design choices

Routes for walking, wheeling and cycling in rural areas need to be as inclusive as possible to meet authorities' statutory duties and to maximise their use. This may involve balancing the requirements of different user groups alongside physical and other constraints. This section discusses how the following aspects affect different user groups:

- access controls
- gradient
- surfacing
- lighting

Access controls

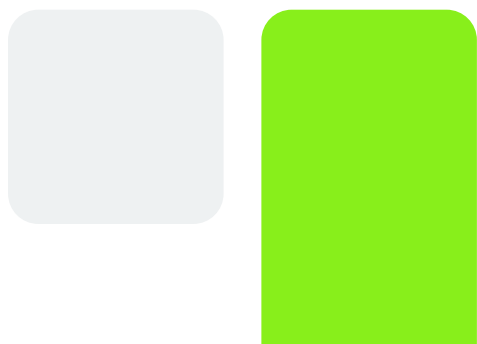
There is a general presumption against the use of access controls where people join and leave active travel routes. Where they are considered essential, for example to prevent use of the route by unauthorised vehicles, access controls should without exception be designed to be accessible by everyone that may legitimately use the route.

Further guidance on the use and design of access controls is given in Section 8.3 of LTN 1/20 and in Chapter 8.

Gradient

Recommended values for gradients on walking/wheeling and cycling routes are given in Chapter 5. Where new structures are being built – for example, ramps to over- or under-bridges – desirable gradient values should always be achieved. If routes need to follow existing topography – for example, via quiet country lanes – this may not always be feasible.

Any decision to adopt a route with a gradient that some people may find too steep should only be taken if the objectives of the scheme, and the types of users that are anticipated, are consistent with it.



Surfacing

As a minimum, active travel routes should be surfaced in a well-maintained and defect-free material, suitable for walking, wheeling and cycling. Unsurfaced and uneven routes, typical of existing footpaths and bridleways across the countryside, exclude many users – for example, people using manual wheelchairs and tricycles.

Bound surfaces minimise the effort needed to travel on a path and therefore increase user comfort. While unbound surfaces such as a self-binding aggregate can be used by people wheeling and cycling, they will not find the experience as easy.

On the other hand, while equestrians can use paths and carriageways surfaced in bound materials such as hot rolled asphalt or asphalt concrete, horses can find unbound surfaces more comfortable. Softer bound surfaces, such as those using recycled rubber, are available but may have a lower design life and need more maintenance.

Table 4-1 below summarises the inclusivity of different surfacing design choices. Further guidance on surfacing is given in Chapter 14.

Table 4-1: Inclusivity of surfacing design choices

Design Choice	Notes
Surfaced and bound	Provision suitable for most user groups and users
Surfaced and unbound	Provision not suitable for all user groups and will exclude some potential users
Unsurfaced	Provision suitable for few user groups and will exclude most potential users

Lighting

The decision whether or how to light a route in a rural area, including routes adjacent to unlit roads, will affect its usability and safety after dark, which in winter includes regular journeys for work, care and education. Women and girls, older people, and children walking to/from school, may be less willing to use an unlit path after dark due to actual and perceived safety and security concerns. Disabled people, particularly visually impaired individuals and those with anxiety conditions, are also disproportionately affected by poor lighting. Lighting decisions should explicitly consider the needs of all users, in particular where they affect those with protected characteristics under the Equality Act 2010.

Other factors that affect lighting choice, include:

- **dark sky policies:** several national landscapes are now certified dark sky reserves, and some rural villages have local dark sky policies. Installing lighting on an active travel route is likely to conflict with such policies
- **biodiversity:** rural lighting may interfere with light-sensitive protected species such as bats and other forms of biodiversity, as evidenced by the Institute of Lighting Professionals. Alternative forms of lighting, such as solar studs embedded in paths, can reduce these impacts
- **hazards:** Lighting may be beneficial to highlight safety risks, such as crossings, junctions, tunnels, bridges and bends. Additionally, some signs must be directly lit

Table 4-2 below summarises the inclusivity of some different lighting design choices. Lighting should be designed to illuminate both the route and users. Further guidance on lighting design is given in Chapter 14.

Table 4-2: Inclusivity of lighting design choices

Design Choice	Notes
Lighting from above	Provision suitable for most user groups and users
Bollard lighting	Provision not suitable for all user groups and will exclude some potential users
Stud lighting	Provision not suitable for all user groups and will exclude some potential users
Unlit	Provision not suitable for all user groups and will exclude some potential users

4.5 Protection from motor traffic on highways

Protecting people walking, wheeling and cycling from busy and fast motor traffic is essential for their safety and comfort. Pedestrians and cyclists are among the most vulnerable road users, and exposure to high-speed or high-volume motor traffic increases the risk of collisions and discourages active travel. Physical separation between people walking, wheeling and cycling and motor vehicles is therefore essential in high speed and/or volume environments.

The [Road Safety Strategy](#) supports people-focused design to encourage safer, more active travel, and also highlights that street design should reflect the [Hierarchy of Road Users](#) and better protect vulnerable road users. This includes embedding safety into road design, maintenance, and setting appropriate speed limits.

This is particularly important for ensuring that these are used by women and girls, who are more likely to be undertaking care-related journeys with young children, and more likely to use cycle lanes where there is full physical separation.

Table 4-3 summarises the traffic conditions when protected space is needed, or when walking, wheeling and cycling mixed with motor traffic is appropriate. It supersedes Figure 4.1 in LTN 1/20 for both urban and rural areas.

Guidance on the design of separation between users and motor traffic on busy roads is given in Chapter 6.

Where pedestrians and cyclists share carriageways with motor vehicles, traffic volumes should be no more than 1,000 vehicles per day (vpd) or 100 vehicles per hour (vph) (Traffic Advisory Leaflet 3/04). Actual traffic speeds should be no more than around 20mph, although speed limits are set by Local Highway Authorities and should be based on local circumstances. The Highway Code (Rule 163) advises drivers to keep to a low speed when passing a pedestrian who is walking in the road.

However, at 100 vph, almost two vehicles are passing people every minute. This results in constant interactions and the possible need to manoeuvre into the verge or close to a hedge, especially if they are in groups – which will be more difficult for people using wheelchairs or tricycles.

This level of traffic should therefore be regarded as an upper limit for walking, wheeling and cycling routes, and designers should aim for a much lower frequency of interaction of around one vehicle every 5 minutes, which is around 10 vehicles per hour.

Similarly, low traffic speeds and volumes are desirable to create safe and comfortable conditions for equestrians sharing space with motor vehicles. Rule 163 of the Highway Code advises drivers to pass horse riders and horse-drawn vehicles at speeds under 10mph.

Where separate provision for people to walk and wheel has been provided and cyclists and equestrians are mixing with motor vehicles travelling at up to around 20mph, traffic volumes may be up to 2,500vpd or 250vpd or vph, but should desirably be less.

Table 4-3: Appropriate protection from motor traffic on highways

Table legend: **Green** – Provision suitable for most people. **Amber** – Provision not suitable for all people and will exclude some potential users and/or have safety concerns. **Pink** – Provision suitable for few people and will exclude most potential users and/or have safety concerns.

Speed limit ¹	Total motor traffic flow (pcu/24 hour) ^{2,3}	Protected space for walking/wheeling ⁴ – fully protected footway	Protected space for walking/wheeling ⁴ – virtual footway	Walking/wheeling in mixed traffic	Protected space for cycling ⁴ – fully protected cycle track	Protected space for cycling ⁴ – stepped cycle track	Protected space for cycling ⁴ – light segregation	Cycle lane (mandatory/advisory)	Cycling in mixed traffic ⁵
20mph ³	0–999	Suitable for most	Suitable for most	Suitable for most	Suitable for most	Suitable for most	Suitable for most	Suitable for most	Suitable for most
	1,000–1,999	Suitable for most	Suitable for most	Suitable for most to not suitable for all	Suitable for most	Suitable for most	Suitable for most	Suitable for most	Suitable for most
	2,000–3,999	Suitable for most	Suitable for most to not suitable for all	Not suitable for all to suitable for few	Suitable for most	Suitable for most	Suitable for most	Suitable for most	Suitable for most to not suitable for all
	4,000–5,999	Suitable for most	Not suitable for all	Suitable for few	Suitable for most	Suitable for most	Suitable for most	Suitable for most to not suitable for all	Not suitable for all
	>6,000	Suitable for most	Not suitable for all	Suitable for few	Suitable for most	Suitable for most	Suitable for most	Not suitable for all	Not suitable for all to suitable for few
30mph	0–1,999	Suitable for most	Not suitable for all	Suitable for few	Suitable for most	Suitable for most	Suitable for most	Not suitable for all	Not suitable for all
	2,000–3,999	Suitable for most	Not suitable for all	Suitable for few	Suitable for most	Suitable for most	Suitable for most	Not suitable for all	Not suitable for all to suitable for few
	4,000–5,999	Suitable for most	Not suitable for all	Suitable for few	Suitable for most	Suitable for most	Suitable for most	Not suitable for all to suitable for few	Suitable for few
	>6,000	Suitable for most	Not suitable for all	Suitable for few	Suitable for most	Suitable for most	Suitable for most	Suitable for few	Suitable for few
40mph	Any	Suitable for most	Suitable for few	Suitable for few	Suitable for most	Not suitable for all	Not suitable for all	Suitable for few	Suitable for few
50mph	Any	Suitable for most	Suitable for few	Suitable for few	Suitable for most	Suitable for few	Suitable for few	Suitable for few	Suitable for few

When using Table 4-3, the following should be considered:

- speeds and traffic volumes can be reduced to bring different design choices into consideration – see Chapter 7 for guidance on using traffic management techniques to enable mixing with motor traffic
- the potential for seasonal variations in traffic flow and speed should be considered to ensure routes are usable at all times of the year. Flows can be much higher in summer in holiday areas for example
- Protected space for walking and wheeling, in the form of fully protected or virtual footways (see Chapter 7), should be provided alongside motor traffic on all roads and streets where there is more than occasional pedestrian demand and space is available. It is important that any footway is of sufficient width as a narrow footway risks people walking or wheeling in the carriageway.

It should be noted that highway authorities have a duty, under Section 66 of the Highways Act 1980, to provide a proper and sufficient footway as part of the highway in any case where they consider the provision of a footway “*as necessary or desirable for the safety or accommodation of pedestrians*”.

Where insufficient space or other constraints prevent the provision of protected space for walking and wheeling, designers should apply Table 4-3 to gauge whether it is suitable to be included on the signed walking network. Further advice on providing for active travel on country lanes and quiet streets is given in Chapter 7.

¹ If speed data is available this should be used in preference to the speed limit to assess crossing suitability – for example, some country lanes subject to the national speed limit may have much lower actual speeds. If the 85th percentile speed is more than 10% above the speed limit the next highest speed limit should be applied.

² The recommended provision assumes that the peak hour motor traffic flow is no more than 10% of the 24-hour flow.

³ Total flow means total of both directions, if two-way.

⁴ Shared-use paths constitute protected space for walking, wheeling and cycling.

⁵ In rural areas achieving speeds of 20mph is difficult, and so cycling in mixed traffic with speeds up to 30mph will be generally acceptable with motor vehicle flows of up to 1,000 pcu per day.

4.6 Separation and sharing of active travel routes

Pedestrians and cyclists

In rural settlements, where there is potential for a significant volume of active travel movements, the strong presumption set out in LTN 1/20 in favour of separating walking and cycling facilities applies.

Between rural settlements, shared use provision may be acceptable for new and improved active travel routes. The higher proportion of discretionary trips means demand is likely to be lower and more variable (by time of day, day of the week and by season).

Shared use routes should not show which part of the path is reserved for one user group: they are a single path at the same level. Such routes may be away from existing roads or on-highway, built on existing verges or beyond the highway boundary.

Shared use routes should be designed to meet the needs of both pedestrians and cyclists (and equestrians where possible – see below). It is essential they account for the needs of all users.

Consideration of the needs of all people is an important part of the design of shared use routes, and local authorities' duties under the Equality Act 2010 are particularly relevant.

As noted in LTN 1/20 Section 5.6, shared use routes in rural areas where there are likely to be few pedestrians should be designed as cycle routes with appropriate geometry and priority to enable cyclists to progress at a comfortable speed.

In some locations there may be high demand for walking and wheeling as well as cycling. This, and other factors, may indicate that separation is preferable.

Where provided, separation between pedestrians and cyclists should be by a buffer strip, kerb, or change in material with a raised feature so users clearly perceive the separation. An example of this is a raised trapezoidal delineator. Between settlements, a buffer strip is recommended over a kerb as it is not an urbanising feature and is less likely to create a trip hazard.

Figure 4-1: The Bristol and Bath Railway Path is mostly a 3m shared use route, but separates users at busy sections.



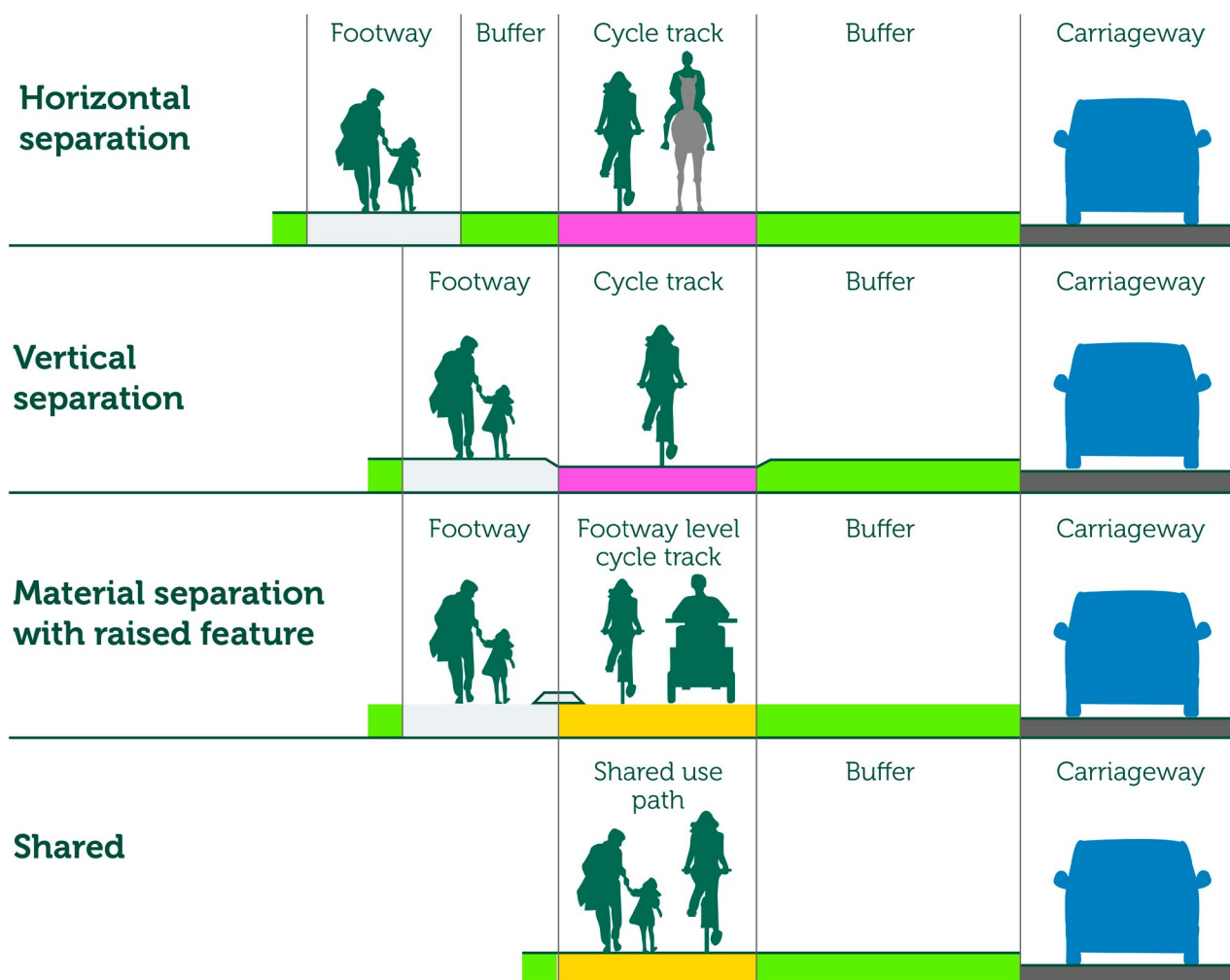
Separation using just a painted white line – even if the paint is raised – is not supported as it is difficult for visually impaired people to detect and is often disregarded, especially by pedestrians. There is often discussion around the use of road markings in rural areas, which may have an urbanising influence. See LTN 1/20 6.2.8 for further detail.

Figure 4-2: Separation by a vegetative barrier between cyclists (right) and pedestrians (left).

Recommended types of separation are shown in Figure 4-3. This is shown in the context of a route (two-way for cycling) next to a carriageway, but the same principles apply to routes away from highways.



Figure 4-3: Separated and shared active travel routes.



Cycle tracks are also usable by wheelers and equestrians.

On shared use paths there will be interactions between pedestrians and cyclists. LTN 1/20 notes that although there are few recorded collisions between pedestrians and cyclists on shared use paths, the fact that the two user groups travel at different speeds and sometimes in different directions can affect the level of comfort of both groups. At high flows these may make the experience of using a path uncomfortable.

Because of their higher speed, cyclists will encounter more pedestrians than vice versa, and [research](#) has shown that cyclists' comfort is more affected by the presence of pedestrians than the reverse. For example, on a route carrying 300 pedestrians and 300 cyclists per hour (total flow in both directions), a cyclist will meet a pedestrian walking towards them around every 6 seconds, whereas a pedestrian will only encounter an oncoming cyclist around every 18 seconds.

LTN 1/20 (Table 6-3) advises that shared use routes carrying up to 300 pedestrians per hour should have a minimum width of 3 metres. This equates to a pedestrian flow of 100 people per hour per metre of width (pphm), or 1.7 people per minute per metre (ppmm).

High cycle flows can also be a problem for pedestrians, particularly where cycle speeds are high. Peak cycle flows on the Bristol-Bath route (see Figure 4-1) of up to around 1,000 per hour have required sections of the path to be separated.

The principal indicators when deciding whether paths should be separated or shared are in Table 4-4 below. The choice will depend on the balance between these indicators.

Having space available for separated provision does not necessarily mean separation should be chosen. Sometimes a wider shared path is a more suitable choice if it best meets the objectives and context of the route.



Table 4-4: Active travel routes – indicators for sharing and separation

Indicator	Shared 	Material separation with raised strip 	Vertical separation 	Horizontal separation 
General context	Appropriate outside built-up areas and through urban greenspaces. Also suited to locations with higher place activity – such as public spaces and rest points, with local widening advisable.	Appropriate in built-up areas. Wide extent of hard surface and paving contrast less suited to rural areas. Along highways, place cycle track on carriageway side.	Appropriate in built-up areas. Wide extent of hard surface less suited to rural areas. Along highways, place cycle track on carriageway side.	Appropriate outside built-up areas and through urban greenspaces. Buffer strip softens overall impact and provides flexibility in use. Along highways, place cycle track on carriageway side.
Typical advisable widths (see Chapter 5) Excludes additional widths required at fixed objects – see LTN 1/20 Table 5-3)	Desirable width of at least 3m. Increased widths required to suit user demand. Wider paths increase user comfort regardless of flow.	Desirable overall width of at least 5m (2m footway and 3m cycle track).	Desirable overall width of at least 5m (2m footway and 3m cycle track).	Desirable overall width of at least 6m (2m footway + 1m buffer + 3m cycle track). Minimum buffer strip width reflects maintenance requirements.
User demand (including potential)	Pedestrian flow is critical factor – maximum 100pphm (two-way total).	Maximum 600 cyclists per hour (two-way), based on 3m cycle path. Less suitable for low cycle flows as walkers and wheelers more likely to use the cycle track.	Minimum widths of pedestrian and cycle provision depend on demand (see LTN 1/20 for cycle track widths, and Inclusive Mobility for pedestrian path widths). Suitable for low and high pedestrian and cycle flows.	Minimum widths of pedestrian and cycle provision depend on demand (see LTN 1/20 for cycle track widths, and Inclusive Mobility for pedestrian path widths). Suitable for low and high pedestrian and cycle flows.

Indicator	Shared 	Material separation with raised strip 	Vertical separation 	Horizontal separation 
Demand variability	Shared routes are most efficient when pedestrian and cycle demands peak at different times.	-	-	-
Cycle speed	Not suitable for high cycle speeds (greater than 30kph). Where speeds are high (such as on/after downhill sections), speed-reducing measures may be needed – see Section 8.5.	Not suitable for high cycle speeds (greater than 30kph) as walkers and wheelers may use the cycle track, increasing conflict.		
Construction	Easier to construct and maintain.	Different surfaces add construction complexity.	Kerb adds construction complexity.	Buffer strip adds maintenance requirements.

Pedestrians, cyclists and equestrians

When people walking, wheeling and cycling need to share routes with horses, additional width may be needed to ensure comfort and improve safety for all user groups and to enable different user types to pass each other.

The bridleway network is fragmented and equestrian use of cycle tracks, footways or footpaths is not necessarily permitted and can be difficult. This means new traffic-free public rights of way which assist in extending or linking it together should normally be (or be converted to) bridleways or byways, or other types of route that permit equestrians. Horses are also permitted to use highway verges but they will need to be wide enough to form safe routes.

Providing for equestrians may not require different provision from people walking, wheeling and cycling in terms of width or surfacing. A minimum desirable usable width of 3m can provide an acceptable level of service for all path users where overall user numbers are low and if there is also low equestrian use. However, note that additional width is required to maintain effective width where the path is next to fixed objects regardless of user groups – see LTN 1/20 Table 5-3.

However, where numbers of users walking, wheeling and cycling are low but there is regular equestrian use on shared paths (for example, near a livery stables or where the route is well used by local riders), a minimum desirable overall usable path width of 4.5m will allow safe overtaking and minimise close interactions between horses and other path users.

In such circumstances, it may be desirable to provide any further additional width in the form of a verge usable by horses, which will also support local biodiversity. Intermittent verges or occasional passing places may be feasible even if the whole length of the route cannot be wider.

Figure 4-4: Trotting strip alongside a pedestrian/cycle path.



Credit: Walk Wheel Cycle Trust

4.7 Personal safety

Routes should be designed to promote safety and enable people to feel secure in their surroundings. Safety and feelings of safety are particularly important for women and girls, but safer spaces benefit a wide range of groups including disabled people and those from ethnic minorities. Well-designed spaces can improve feelings of safety and behaviour and increase inclusivity, and so should be a key consideration.

Social interaction is one possible route to help and this can be encouraged by providing places to stop and gather. Seating plays an important role in this, especially for those who require regular breaks as set out in Chapter 11. A diverse range of seating will ensure that it appeals to a broad range of users.

Natural surveillance can help people feel safe. A route that is naturally overlooked and where activity is routinely observed may deter potential criminals and discourage anti-social behaviour.

Whether or not a route will be overlooked by buildings should be considered in the design process, and may also contribute to an increase in potential path usership.

Compared to routes in urban areas, rural routes will likely have less opportunity for passive surveillance – particularly those away from highway corridors and between settlements. Care needs to be taken with designing these to maximise visibility, provide sufficient escape routes, and avoid narrow paths where possible.

While real eyes are preferred, CCTV or ‘remote eyes’ could be considered but would require careful engagement with stakeholders. Their use and impact is likely to be very rare in rural contexts (and may be especially difficult to achieve in places with no power supply and poor digital connectivity), but may offer opportunities to address wider issues around agricultural crime or anti-social behaviour.

Routes should be well maintained, including cutting back vegetation – see Chapter 14. Landowners have a duty to ensure that public rights of way on their property remain accessible and safe. Their duties relate to structures (for example, gates), cutting back vegetation, and livestock management. Concerns around personal safety may enable conversations to be held around re-routing paths or improving maintenance to increase users' feelings of personal safety.

Lighting can improve safety and the perception of safety on routes – see Section 4.4 for a wider discussion around lighting.



4.8 Audit processes

Road safety audit

Guidance on applying a road safety audit (RSA) process to cycling infrastructure is given in LTN 1/20 Section 4.5. This should also be applied to walking, wheeling and cycling schemes in rural areas. In summary:

- while RSAs are not mandatory, they are an established part of the design and implementation process. They are a way in which local authorities can show they have properly considered their road safety duties
- the design team retains responsibility for the scheme and is not governed by the RSA findings. There is therefore no sense in which a scheme 'passes' or 'fails' the RSA process
- RSAs only consider one of the five core design principles – safety – and designers should consider how recommendations affect the other four principles before accepting them
- any such decisions by the design team should be documented as part of the audit process

Walking, cycling and horse-riding assessment and review

The Design Manual for Roads and Bridges (DMRB) [document GG142](#) sets out the process for undertaking a walking, cycling and horse-riding assessment and review (WCHAR). This is applicable to the strategic road network of motorways and trunk roads managed by National Highways.

WCHARs aim to facilitate the inclusion of all walking, cycling and horse-riding modes in the highway scheme development process from the earliest stage, enabling opportunities for new or improved facilities and their integration with the local and national network(s). This could include creating or improving facilities for pedestrians, cyclists and equestrians that are separate from the highway.

While not mandatory for other road schemes, GG142 provides a useful basis for assessing the needs of all users and the measures that should be taken to meet them. Further guidance on the opportunities presented by major highway schemes is given in Chapter 13.

Equality and access assessments

The Equality Act 2010 places the PSED on local authorities. This requires them to exercise their functions in such a way as to reduce or minimise disadvantages experienced by people due to their protected characteristics, and make reasonable adjustments to allow disabled people to gain access.

It is likely that the promoter of an active travel scheme will be a public body and so the PSED will apply directly. However, even if schemes are being promoted by other bodies, local authorities and other public organisations are required to have regard to the PSED when exercising their functions, and so the PSED should be fulfilled for all schemes.

Access audits assess how accessible a scheme is for disabled people and form part of a wider equality impact assessment that considers the effects of a project on people with protected characteristics. Undertaking access audits and equality impact assessments helps ensure designs comply with the PSED, and should be undertaken from the start of project development and revisited throughout the design process.

Early application of inclusion and equity considerations ensures they are embedded in design decisions, rather than added retrospectively.

A safety audit may also be useful in assessing whether the path will feel accessible for different user groups, particularly after dark. This assessment may also be important in complying with the PSED.

Constraints may mean it is impractical to fully meet the needs of all potential users at all times. However, any decision to provide a lower degree of accessibility – for example, in terms of surfacing choice and lighting – should be recorded and justified, considering factors such as:

- scheme objectives
- types of user anticipated user
- purposes and timing of anticipated trips





5. Geometric requirements

5.1 Chapter summary

This chapter sets out the minimum geometric requirements for people walking, wheeling and cycling in rural areas. It also includes the space requirements of other types of users who often travel along non-motorised routes, byways open to all traffic or quiet country lanes. These include equestrians and horse-drawn vehicles, large all-terrain mobility vehicles (such as Trampler and Boma 7) and agricultural vehicles.

This chapter generally provides guidance that is appropriate for bi-directional routes, but designers can consider uni-directional facilities for cycling if they are separated from space for walking and wheeling. Guidance on the design of uni-directional cycle facilities is given in LTN 1/20. Additional space may also be needed for other functions, such as planting, drainage and facilities to stop and rest – see Chapters 11 and 14.

5.2 Space requirements of different user types

People walking, wheeling and cycling, and equestrians

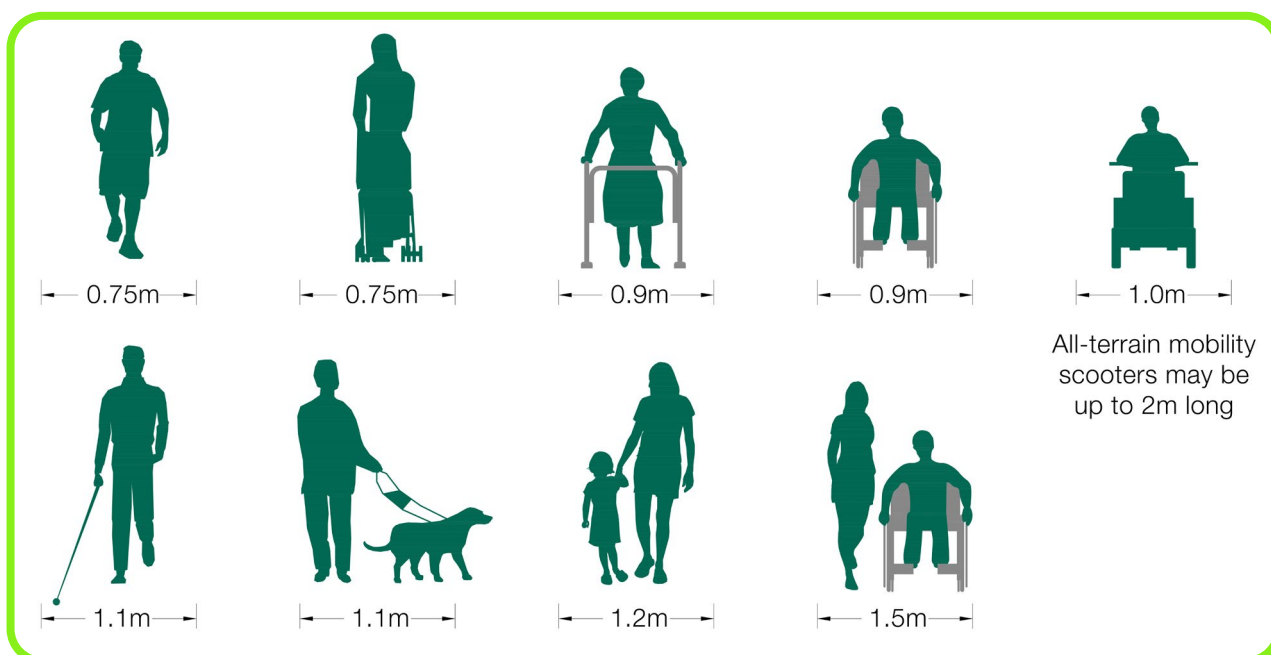
Figure 5.1 summarises the typical width and height requirements for people walking, wheeling and cycling, as well as equestrians. These dimensions can be used to assess the suitability of provision along rural active travel routes from first principles.

Further details of the space requirements for people walking and wheeling are given in Manual for Streets and Inclusive Mobility. Mobility scooters vary in size; they can be up to 850mm wide and as long as 2m with a turning circle up to 5m. Some mobility vehicles have a degree of all-terrain capability and are suitable for both on- and off-road use. These can vary in size, with larger vehicles being more capable.

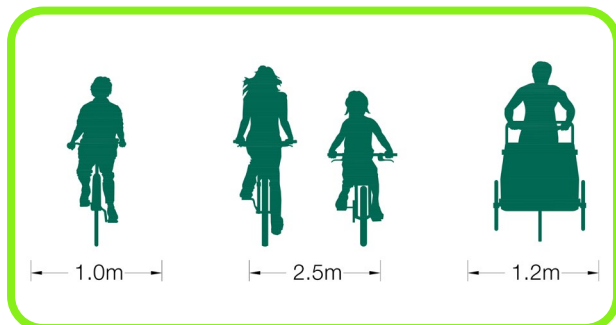
Further guidance on the space requirements for equestrians can be found on the [British Horse Society's website](#).

Figure 5-1: Typical user space requirements.

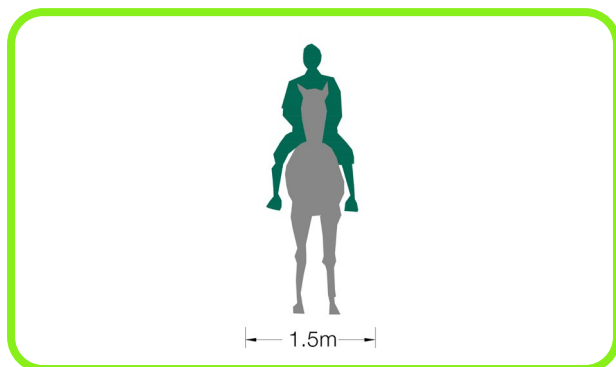
Typical user space requirements with 2.3 metres min headroom.



Typical user space requirements with 2.4 metres min headroom including 2.7 metres min headroom at enclosed spaces longer than 23 metres.



Typical user space requirements with 3.4 metres min headroom (ridden), 2.8 metres at momentary obstruction and 2.7 metres min headroom (led).



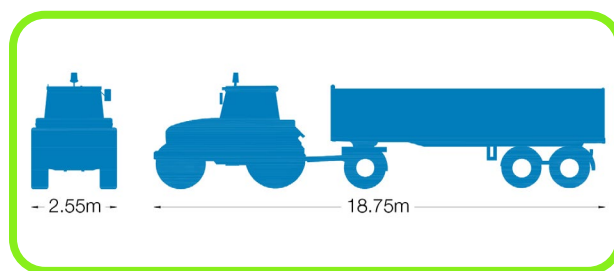
Active travel can be a social activity and people will wish to walk, wheel and cycle in pairs and groups in rural areas, sometimes in quite large groups. Designing routes that can enable people to travel side by side, at least in pairs, will add to their usability and attractiveness.

Agricultural and horse-drawn vehicles

Rural byways and highways will generally need to accommodate vehicles used for agriculture, horticulture and forestry, which can vary significantly in size.

The maximum width of a standard tractor is 2.55m, which can be increased to 3m when it has fully mounted equipment or integrated towed equipment. The maximum length of a tractor and trailer combined, without special permission, is 18.75m – see Figure 5.2.

Figure 5-2: Standard tractor and trailer dimensions.



Vehicles wider than 3m must notify the police of their journeys, and vehicles wider than 3.5m must also have attendants to escort the vehicle.

Larger agricultural vehicles such as combine harvesters and crop sprayers may need to use some sections of byways and highways, and other PRow, at certain times of the year. Designers should engage with local landowners and tenants to establish any particular requirements.

Most horse-drawn carriages used on PRow are between 1.2 to 1.5m wide, and so can be accommodated on routes designed to enable access by agricultural vehicles.

5.3 Typical cross-sections

User-specific routes

Pedestrians

Manual for Streets Section 6.3 and Inclusive Mobility Section 4.2 contain guidance on the minimum widths of footways and footpaths.

Generally, a minimum width of 2m should be provided which allows for two wheelchair users to pass in comfort. A width of 2m also allows two large mobility scooters to pass in relative comfort. Routes narrower than 1.8m will require additional space, either in the form of regular passing places or over-runable space for people using wheelchairs and mobility scooters to pass one another. No section of surfaced path should be narrower than 1.5m, or 1.2m at short pinch points.

Additional width should be provided where pedestrian demands are – or are anticipated to be – high. Designers should aim to meet a flow of 12–14 pedestrians per metre width per minute. Additional width should also be provided in cases where users are expected to be regularly travelling in groups.

Cyclists

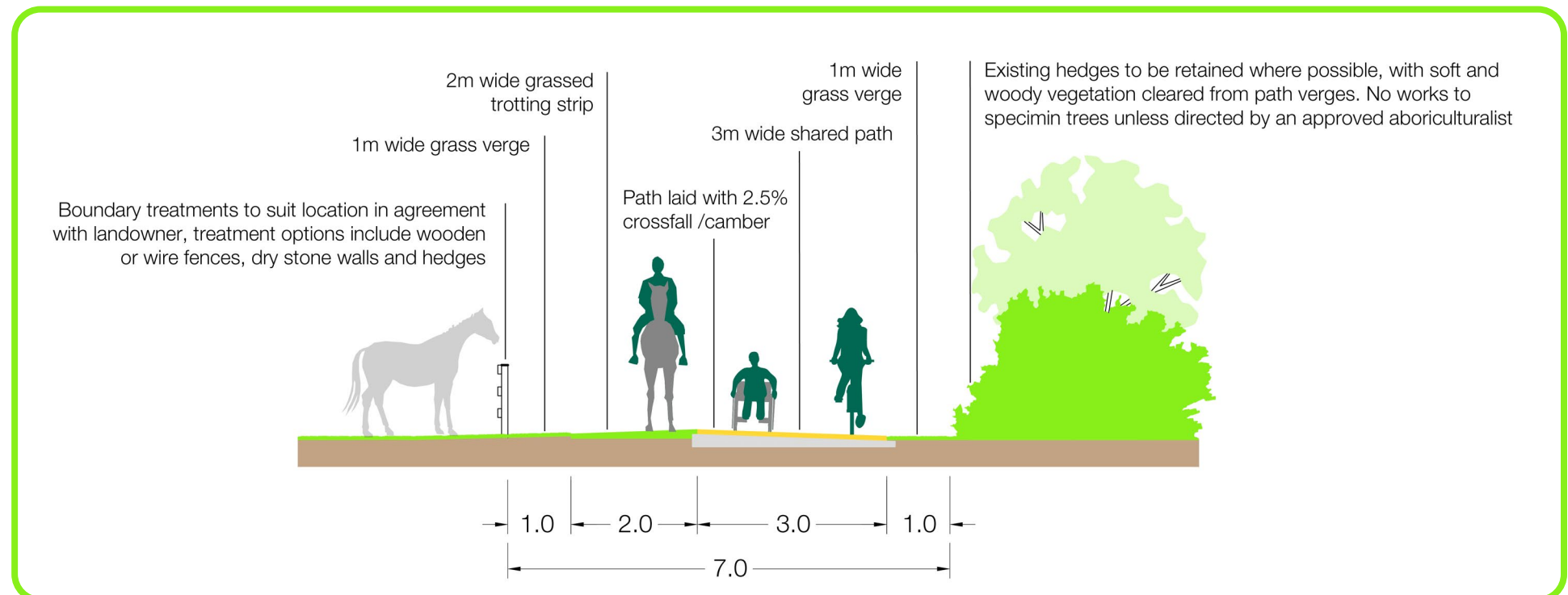
Reference should be made to Chapter 5 of LTN 1/20 for space requirements for dedicated cycle tracks and on-carriageway cycle lanes.

Equestrians

Where engagement with path user groups indicates demand for a separate trotting strip and space allows, a width of 3m should enable two horses to walk side by side or for one horse to pass another with care and should be regarded as an absolute minimum. A surfaced width of 1.5 to 2m may be adequate depending on the available overall space.

Where space permits a verge separating the trotting strip from the active travel route could be provided, with a minimum width of 1m and desirable minimum width of 1.8m to improve user comfort.

Figure 5-3: Example of grassed trotting strip alongside shared use active travel route.

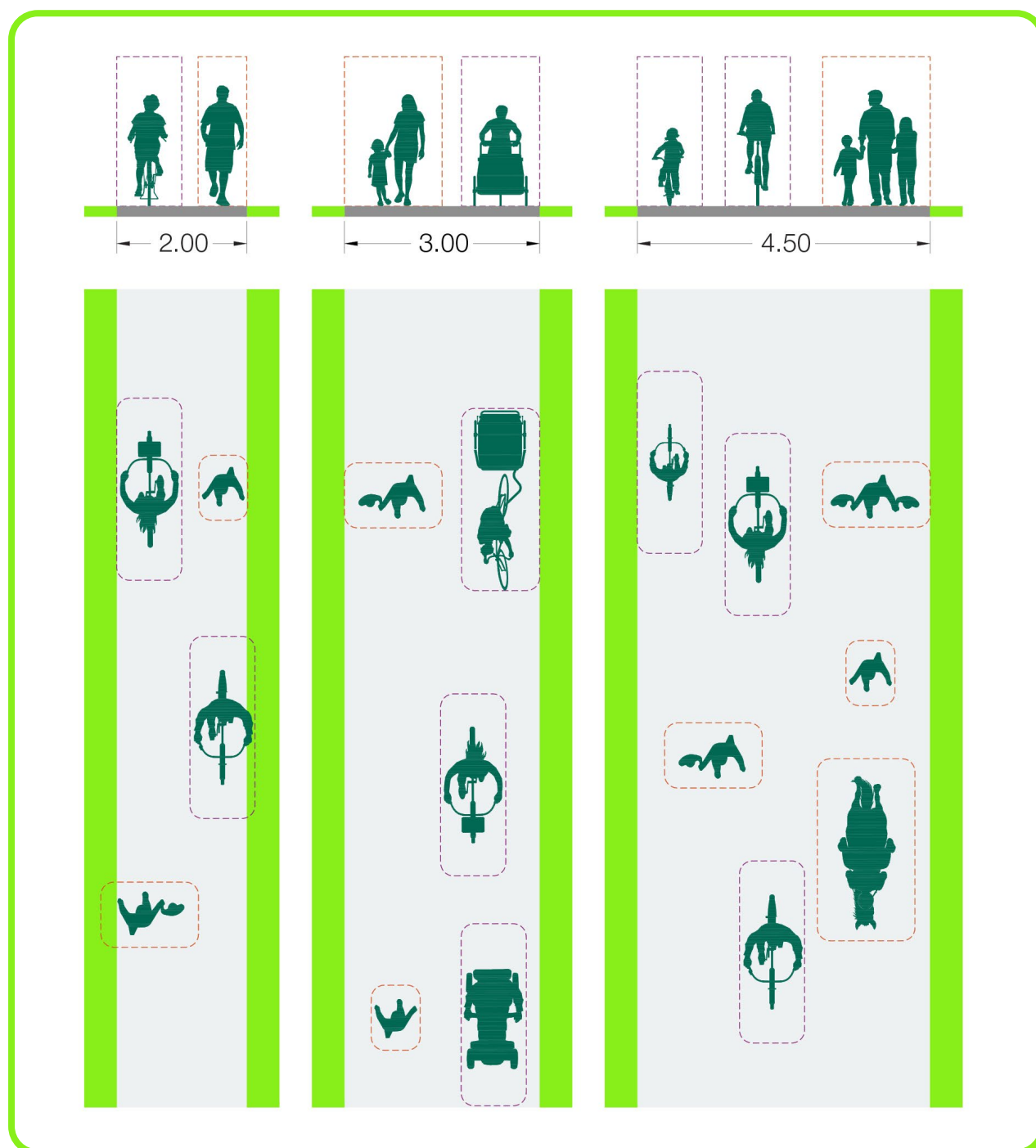


Shared routes

Shared routes should ideally be a minimum of 3m wide but should be made wider where possible, subject to any physical constraints and other demands for space in the cross section – for example the need for nature conservation. Increasing the space available reduces any conflict between walkers, wheelers and cyclists, and enables a path to accommodate people walking, wheeling and cycling side by side and in groups.

Figure 5-4 shows the effect of path widths of 2m, 3m (recommended minimum) and 4m. It shows that a 2m path will not be comfortable for all users – it will not permit a cyclist to pass people walking or wheeling side by side, for example.

Figure 5-4: Effect of different width routes. Shared-use routes narrower than 3m wide are not recommended.



However, in low-flow situations (such as on inter-settlement routes with few pedestrians) or where there are significant physical constraints (such as on canal towpaths), narrower routes may be considered. A typical minimum surfaced width of 2m will enable two people using wheelchairs or mobility scooters to pass one another, or for cyclists to move aside and give priority to pedestrians. Surfaced paths should be no narrower than 1.5m for short stretches. Where surfaced facilities are of less than 2m width, these should have passing places and/or additional level and over-runnable space with a minimum overall width of 2m to enable users to pass one another.

The absolute minimum width is 1.2m at pinch points, which is the minimum width required to accommodate a mobility scooter or the cycle design vehicle (see LTN 1/20 Para 5.4.1) and there should be clear sightlines to any pinch point.

Where there is a vertical feature at the edge of the path, such as a wall or a drop into water, the effective width of the path will be reduced as people walking, wheeling and cycling will shy away from the feature. Table 5-3 in LTN 1/20 gives the additional space required to maintain an effective path width, which should be taken into account when designing shared routes.

5.4 Cycle design speed

Guidance on the design speed of cyclists is given in LTN 1/20 Table 5-4. These should be used in rural areas, including on inter-settlement shared-use facilities where there are few pedestrians. As noted in LTN 1/20 Para 5.5.3, these should be designed to meet the needs of cyclists, including their width, alignment and treatment at junctions. Visibility splay requirements where shared use routes cross minor junctions and accesses are shown at LTN 1/20 Figure 5-4.

However, it may be necessary to reduce cycle speed in locations where there is significant conflict with people walking and wheeling, such as:

- where desirable path or carriageway widths are not achievable
- on the approaches to crossings or other points of conflict or danger
- where there are local constraints and hazards – such as trees

If it is necessary to manage cycle speeds on shared-use routes, this should be done through horizontal deflection, typically bends. Vertical deflection, such as a road hump, is not comfortable for people with limited mobility, people using all types of adapted cycles, wheelchairs or mobility scooters. Staggered barriers should not be used to control speeds as they increase the risk of conflict between users and are a hazard, particularly after dark.

5.5 Route alignment

Horizontal and vertical alignment

The minimum horizontal and vertical curvature of rural active travel routes in rural areas will normally be determined by the needs of cyclists. Table 5-7 and the sag/crest curve values in paragraph 5.9.5 of LTN 1/20 will apply. It should be noted that these are absolute minimum values and that a larger radius of 5m will enable for more comfortable journeys for users of larger or adapted cycles and mobility scooters. Engagement work with relevant user groups can provide further clarity and context to ensure the best possible alignment.

Gradient

Wheeling and walking

Inclusive Mobility advises that gradients should be:

- desirable maximum 5% – greater than this, the slope is considered a ramp

For ramps:

- absolute maximum 8.3% (1 in 12)
- no more than 10% for very short distances (1m)
- with level landings for every 0.5m height gained

As noted in Section 4.4, in some places in rural areas, including along existing highways, it may not be feasible to achieve these values.

Walking Scotland has produced [Outdoor Accessibility Guidance](#) which considers three zones, A to C. Zone B is 'Informal, moderately managed landscapes' which includes walking and cycling trails. The maximum gradient for Zone B is 8%, which is broadly equivalent to the maximum gradient given in Inclusive Mobility.

A decision to adopt a steeper gradient than 8% may impact on the number of people that may wish to walk or wheel a route, and therefore the economic business case for the scheme.

Cycling

Maximum lengths of gradients for cycling are given in Table 5-8 of LTN 1/20. These are relatively gentle by comparison with international standards and should therefore be regarded as desirable maximum values.

Table 5-1 below gives a higher set of absolute maximum gradient values for cycle routes of different lengths, based on the lower comfort limit values in the Design Manual for Bicycle Traffic (CROW, NL), alongside desirable maxima from LTN 1/20, which have also been extended to cover a greater range of gradient values.

Table 5-1: Desirable and absolute maximum lengths of gradients for cycle routes.

Gradient (%)	Desirable maximum length (m)	Absolute maximum length (m)
2.0	150	500
3.0	80	220
4.0	50	125
5.0	30	80
6.0	20	55
7.0	15	40
8.0	12	30
9.0	9	25
10.0	8	20

Designers should always aim to meet desirable maximum values as this will make routes as comfortable and inclusive as possible. It may be necessary to use steeper gradients if it is necessary to overcome greater height differences, along existing highways, to suit local topography and the need to make connections. However, as with walking and wheeling, this may impact on the number of users and therefore the economic business case – see also Section 4.4.

Significant earthworks may be necessary to create ramps, possibly including switchbacks, in order to overcome major changes in level. However, these can be expensive and potentially intrusive in the landscape. An example is given in the Keswick to Threlkeld case study – see Figure 5.5. The maximum gradient is 1 in 12 and there are landings at 10–15m spacings.

Figure 5-5: Zig-zag path, shortly after construction, to reduce steep gradient to A66. See Keswick to Threlkeld case study.



Sight distances for cycling

Stopping sight distance (SSD) is the distance required for a cyclist to perceive, react and stop safely. Values for SSD, based on cycle design speeds of 20-40 kph, are given in LTN 1/20 Table 5-5. SSD is measured between objects from zero to 2.4m above the ground, and from eye heights in the range of 0.8m to 2.2m.

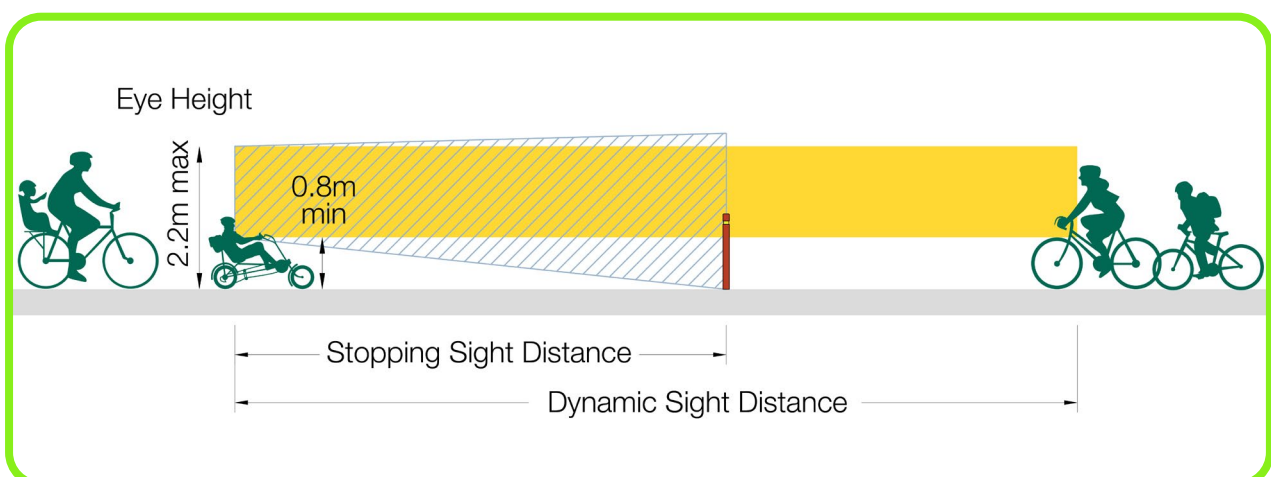
Achieving desirable minimum SSD values is an important requirement for safety, but designers should also aim to provide Dynamic Sight Distance (DSD). This is a longer view which enables a cycle user to see ahead, making riding feel safer and more comfortable, and to pass slower cycle users, pedestrians and equestrians. It is defined by the distance that a cycle user will travel in 8 seconds at the design speed. DSD is measured from the same eye height range as SSD, to a target height of 0.8m to 2.2m.

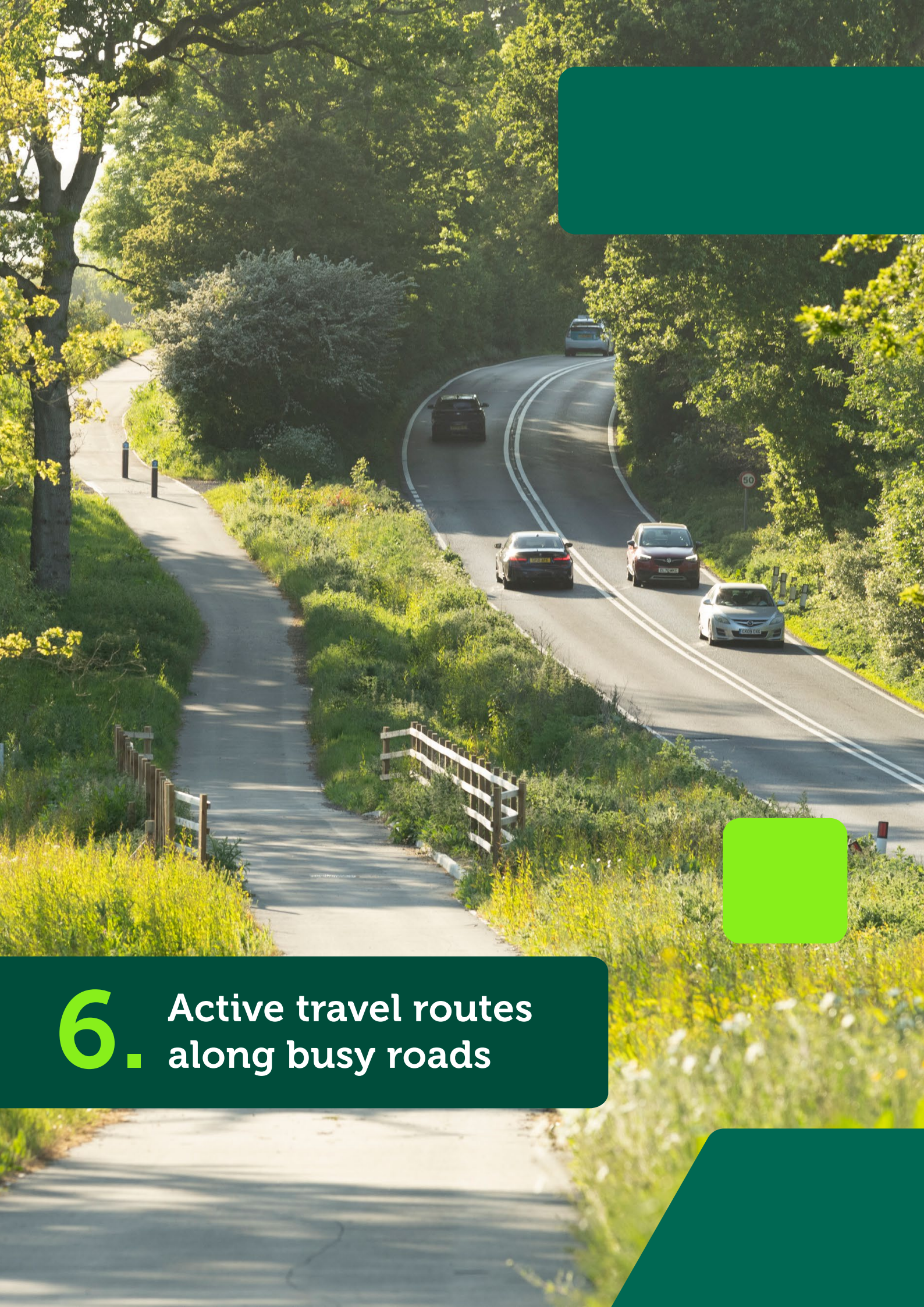
Table 5-2 gives values for SSD and DSD, which are illustrated in Figure 5.6.

Table 5-2: SSDs and DSDs.

Design speed (kph)	Desirable minimum SSD (m)	Desirable minimum DSD (m)
40	47	89
30	31	67
20	17	44

Figure 5-6: SSD and Dynamic Sight Distance (DSD).





6. Active travel routes along busy roads

6.1 Chapter summary

Routes along busy roads can provide an essential direct connection between places, but they are not usually safe, attractive or comfortable for active travel unless there is adequate separation from fast and heavy traffic.

In this context ‘busy’ refers to highways where walking, wheeling and cycling in mixed traffic is not suitable – see Chapter 4. However, busy roads can play an important role in creating and completing active travel networks. Where wide verges exist it is possible to create acceptable conditions, but costs can be high and land or rights will need to be acquired if routes are built outside the existing highway boundary. Bridges may also present width constraints.

6.2 Introduction

Main roads can provide the most direct routes between places in rural areas without excessive gradients. This is often due to improvements in their vertical and horizontal alignments that have taken place over time. In some situations, for example where an area is severed by a major river, railway or motorway, the main road may be the only possible connection between places.

6.3 Separation from the carriageway

However, noise and disturbance from fast-moving and heavy traffic can make the route uncomfortable and unattractive for users and may particularly affect disabled or neurodivergent people.

This can be managed through the separation of path users from motor traffic by features such as a wide verge, hedge, bund or fence. Setting the active travel route above or below the level of the highway will improve conditions.

Reallocating road space and/or reducing the speed of traffic could also improve comfort levels, if practical. Careful consideration will need to be given to safety and perception of safety associated with moving a path further from sight of the carriageway.

Figure 6-1: Active travel route above and separate from the carriageway, Mumbles Road, Abertawe.



Figure 6-2: Active travel route alongside the A27 in Sussex which also provides for horse riders. See A27 East of Lewes case study.



Such routes do not require planning consent if they take place within or ‘outside but adjoining’ the existing highway boundary and are carried out by the highway authority. See Appendix A for further guidance.

Separation of active modes is still the recommended choice for routes alongside busy roads or railways, particularly where use is likely to be high. However, for many inter-urban routes where use is likely to be low a shared approach may well be appropriate.

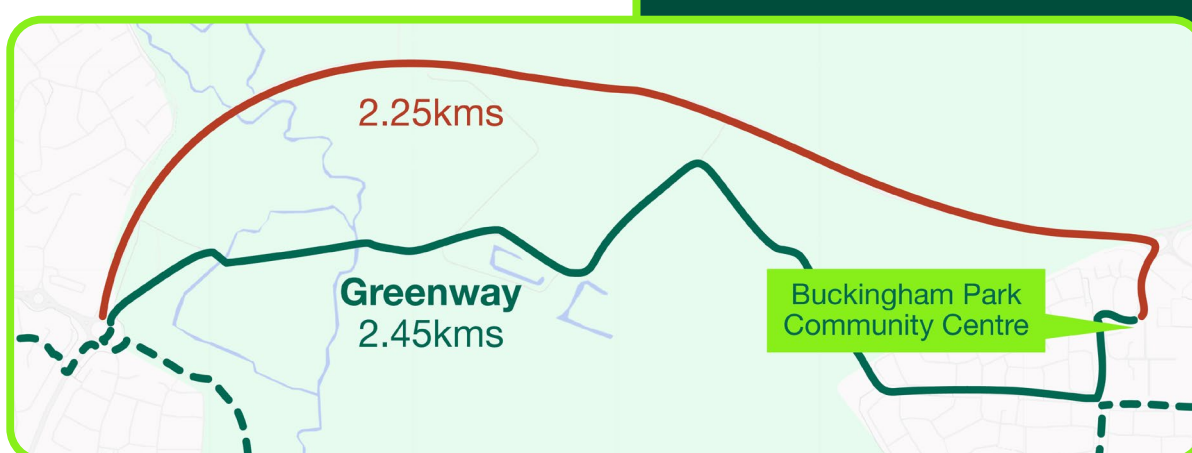
Without adequate separation from motor traffic, routes alongside major highways are unlikely to be used for recreational trips in the countryside, although they can play an important role as a connector between quieter sections of a route. Such short sections of provision may be a very cost-effective way of completing an active travel route.

There are multiple benefits from being well separated from the carriageway. Separation improves actual and perceived safety, reduces noise, wind and headlight dazzle caused by passing traffic, improves air quality and adds to the aesthetics of the route.

Table 6-1 in LTN 1/20 gives minimum separation distances from carriageways based on the speed limit but it is advisable to increase these values, particularly where the route is intended to be used for leisure and recreation. Noise levels drop by the square of the distance from the source, so a small increase in separation has a significant effect, even if this cannot be achieved over the whole route.

Where practicable, designers should aim to achieve a maximum noise environment of 65dBA, a comfortable level at which it is possible to hold a conversation in a normal voice. This may be challenging to achieve alongside busy roads, however. For example, road traffic noise levels could be in the region of 67dB (LAeq, 16hr) at a distance of 10m from the edge of a carriageway carrying 10,000 vehicles per day at an average speed of 70kph, and 3% heavy goods vehicles.

Figure 6-3: St Peter's Greenway and shorter route along nearby road – around 90% of pedestrians and cyclists used the greenway.



Surveys of the St Peter's Greenway in Aylesbury (see case study) found that nearly nine times as many users chose to travel on the greenway rather than walk and cycle on the pre-existing route next to the nearby Martin Dalby Way, even though the road route was slightly shorter – see Figure 6.3. This shows that routes near to busy traffic are much less attractive, and so providing good separation is important where schemes follow main road routes.

Figure 6-4: Separation of active travel route by distance.

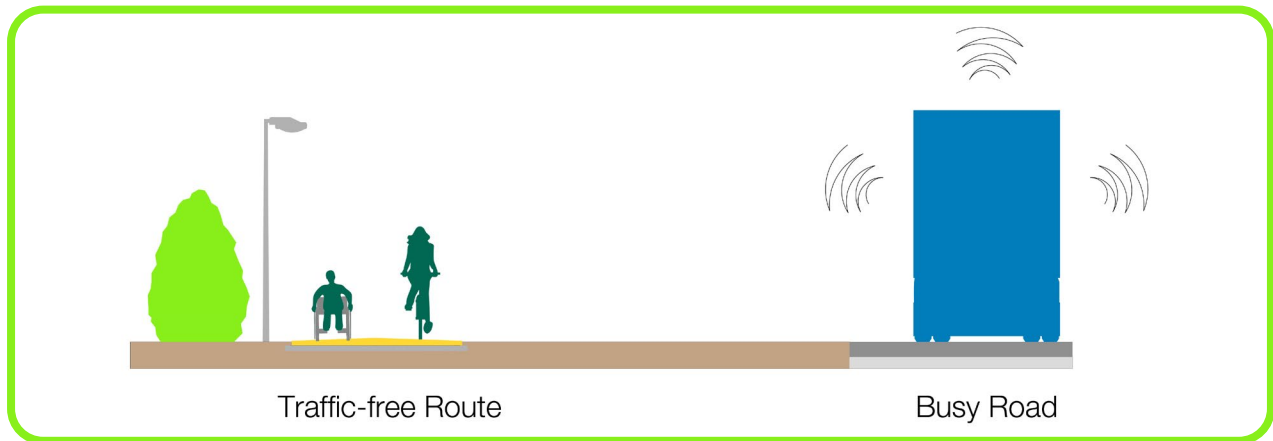


Figure 6-5: Wide verge between carriageway and active travel route, South Downs National Park.



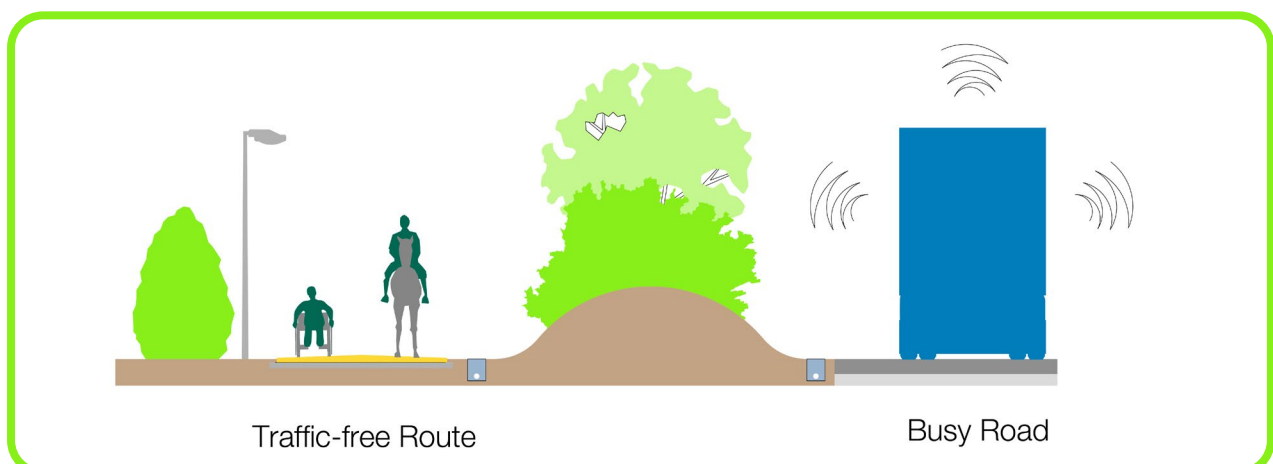
Noise banks in between the active travel route and the carriageway reduce noise and increase comfort levels further. They also reduce the wind impact from passing vehicles – see Figures 6-6 and 6-7.

Noise banks are also useful ways of keeping any excess material that may have been created by forming cuttings on site rather than having to arrange disposal, which also reduces costs. Again, noise banks can be planted to further separate people walking, wheeling and cycling from passing vehicles.

Figure 6-6: Separation of active travel route by distance, noise bank and planting.



Figure 6-7: Separation of active travel route by distance, noise bank and planting.



If space is so restricted that desirable levels of noise cannot be achieved through distance and mounding, a noise fence could be considered. However, the impact of any fence on the effective width of the path and user comfort will need to be reviewed – see Chapter 5. Both fencing and planting may also have a negative impact on feelings of safety for women and girls.

Figure 6-8: Separation of active travel route by noise fence and verge.

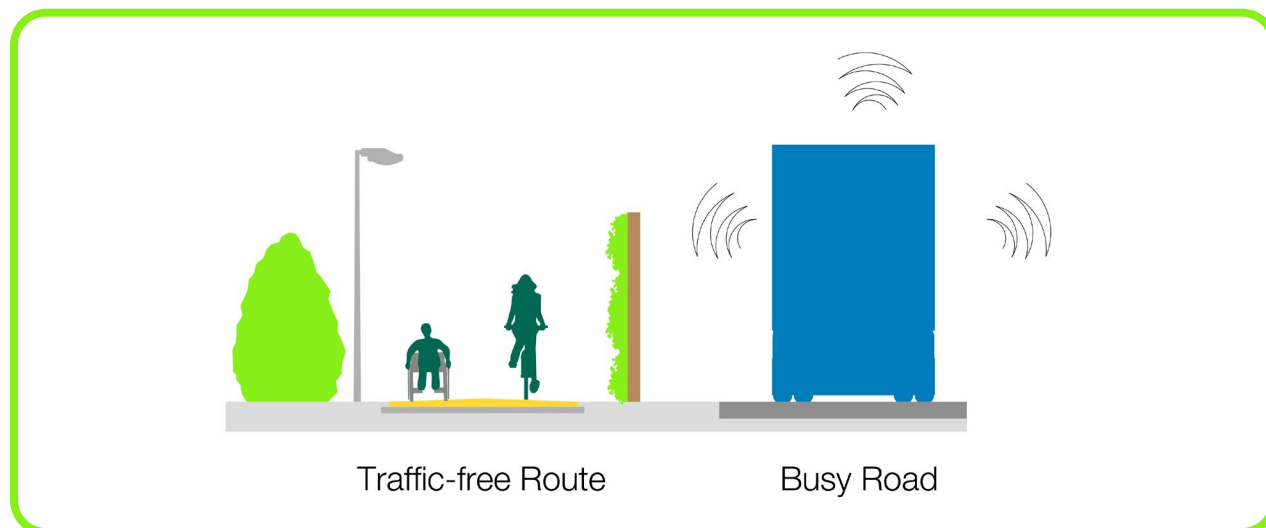


Figure 6-9: Noise fence with heavy planting alongside motorway (on left of image), Auckland.



It is still possible to plant appropriate species in the space between the active travel route and the noise fence to improve the quality of the experience – see Figure 6-9.

Personal security issues

Increasing the visual separation between the active travel route and the carriageway can reduce feelings of personal safety, so it is also important to provide regular exit points from the facility. Providing access and egress that is accessible to all will also be necessary wherever side roads join the highway so that people can join and leave the path.

The need for lighting should be considered and will be essential where the main carriageway is lit so that dark areas are not created. In addition to the existing highway lighting, incorporating pedestrian-level lighting units and/or columns may improve actual and perceived safety. Chapter 4 provides guidance on lighting principles.

Equestrians

Horses can be startled by passing vehicles when there is no adequate separation, noise fence or bank. Based on the requirements of DMRB CD143, the separation between equestrians and the carriageway should be a minimum of 1.8m, including a hard strip where present, and taking into account the overall width of the path.

6.4 Carriageway level cycle tracks and cycle lanes

Some minor roads between settlements that already have a footway may have available carriageway width that can be reallocated to cycling. This can be provided at carriageway level with an upstand buffer being provided for separation and protection. Gaps in the buffer should be provided for drainage purposes.

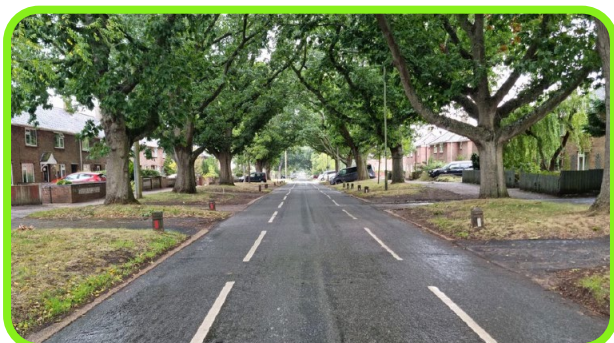
LTN 1/20 gives the minimum requirements for buffer widths but, as noted above, this should be increased where possible. The buffer width can be assumed to include a paved hard strip at carriageway level if present, but only if this is separated by a white line from traffic lanes.

Similarly, interurban routes with low speeds (30mph or less) and moderate traffic volumes (5,000 vehicles per day (vpd)) may be suitable for cycle lanes – see Table 4-3. The use of islands and bollards may regulate vehicle speed.

Advisory cycle lanes with centreline removal

Advisory cycle lanes, with centreline removal, can be used on roads carrying up to around 4,500 vehicles per day (or 500 per hour at peak times), where there would be insufficient space for two motor vehicles to pass if mandatory lanes were used. The central traffic lane should be between 2.6m and 3.8m in width – it should not give the indication that two motor vehicles can pass within the central lane.

Figure 6-10: Advisory cycle lanes, The Avenues, Norfolk.



This design approach is included in LTN 1/20 and has been used in the UK. However, without any physical restrictions there can be significant encroachment into the cycle lanes by motor vehicles.

This problem can be overcome by adding regular but infrequent raised islands, with bollards to ensure visibility as in Figure 6-11. Although there are some places where similar features have been used locally, as in Figure 6-10, this technique is relatively new for the UK. Such features would be effective in keeping the advisory cycle lanes clear unless there was a vehicle coming the other way. The features would also help keep traffic speeds low.

Figure 6-11: Single lane narrowing with advisory cycle lanes, London.



6.5 Construction of active travel routes in highway verges

Highway verges are usually fairly level in cross-section and follow the gradient of the carriageway, which may therefore provide the space for the construction of active travel routes. Construction of an active travel route in the highway verge may therefore be feasible, as long as sufficient space is available for the width of the route and adequate separation from the traffic – see Section 6.2.

Where this is being considered, engagement with a full range of potential route user groups will be useful to understand the context of requirements relevant to such use of the verge.

If space is insufficient, options include:

- reducing the speed of traffic to lessen the buffer width needed
- widening the verge into the carriageway
- piping and filling over the drainage ditch at the rear of the verge
- land acquisition and relocating the fence or hedge to widen the verge
- in some areas of the country there has been some success in translocating hedges, although this is more expensive than planting a new hedge and is not guaranteed to be successful

Consideration will need to be given to any impact on biodiversity, drainage requirements and any utilities or other physical constraints in the verge. For example, lighting columns and other street furniture, such as posts for traffic signs, may need to be moved to create an active travel route without obstacles or narrowings. To prevent damage from passing vehicles, TSM Chapter 1 advises that signs should be set back from the edge of the carriageway, and wherever possible at the back of footway or highway.

In many cases, interurban routes will be two-way walking, wheeling and cycling routes in one of the highway verges and may be shared use. In this case, suitable provision will need to be made to enable people to cross to the route from the opposite side where side roads join or there is frontage development. Where there is need for access to both sides, consideration should be given to providing routes in both verges, one of which could be a local collector route leading to a safe crossing to the main track on the other side.

If cycling is separated from walking and wheeling then uni-directional cycle tracks on either side can also be considered. Mobility scooter and powered wheelchair users can use either the footway or cycle tracks.

6.6 Routes beyond the highway verge

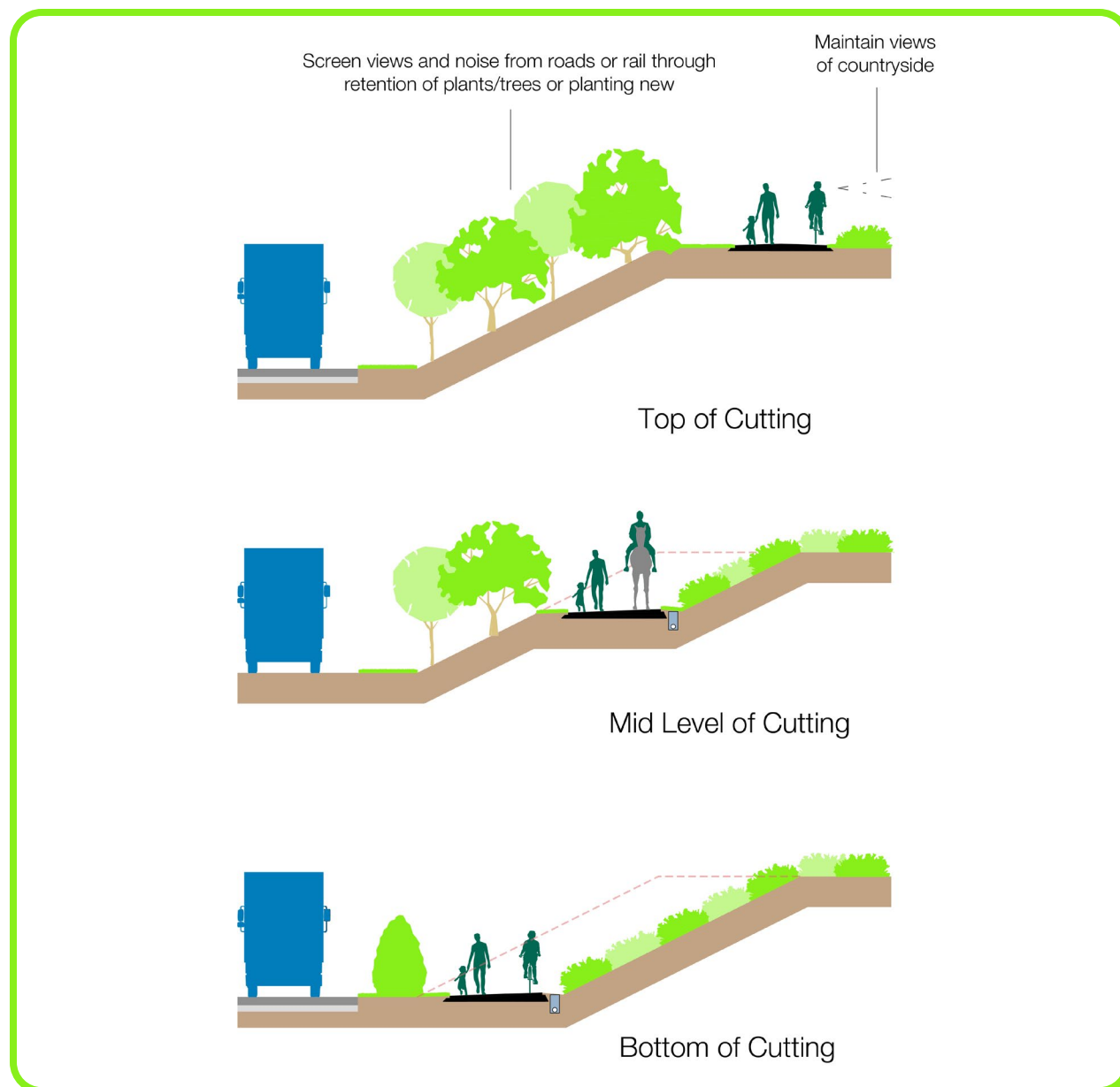
Where the verge width is insufficient to create a route with sufficient separation from the carriageway, a route can be created within any cutting or embankment slopes, or beyond the existing highway land. This will typically involve greater earthworks and cost compared to constructing a route in a verge, although the quality of the route can be high.

Guidance on transitions between routes in the verge and routes beyond the highway boundary is given in Section 9.8.

Figure 6-12: Commencement of an active travel route beyond the verge, Cheshire.



It may be possible to form a route beyond the verge but still within the highway boundary. Figure 6.13 shows options in relation to cuttings. Similar considerations would apply when the road is on embankment.

Figure 6-13: Active travel routes within cuttings.

Routes at the top of cuttings or the bottom of embankments will follow the natural ground profile which may not be conducive to easy wheeling and cycling, unless earthworks are carried out to provide a route that meets vertical alignment guidance – see Chapter 5 and LTN 1/20.

Where routes are beyond the highway verge, particularly when separated by a hedge, wider visibility should be considered, and regular accesses and escape routes will be needed to overcome the adverse effect on perceived personal safety of separating the route from the carriageway.

These will need to be accessible to all and will also be required to provide access where side roads join on the opposite side and/or there is frontage development. Where the active travel route is above or below the existing carriageway (as shown in Figure 6.14), additional earthworks will be required to make the lateral connections.

The lighting of the path should be considered for reasons of personal safety and security. This may be either to supplement the highway lighting, or if the distance from the existing lighting is too great, separate path lighting may be needed.

Active travel routes beyond the verge will need to cross side roads that join the main alignment and in rural areas where speeds are higher, pedestrians and cyclists will need to give way. These side road crossings should be ‘bent out’ so that path users do not have to look over their shoulder to check for vehicles turning into the side road. Locating the path beyond the existing highway verge will make it easier to meet this requirement – see Chapter 10 for more details.

Similarly bridges/culverts will be needed where the route crosses watercourses and other features, unless it is brought back closer to the existing alignment to make use of the existing structure – see Section 6.8.

Figure 6-14: Bridge on the A27 active travel route which also provides for horse riders. See A27 East of Lewes case study.



Going beyond the highway boundary will involve acquiring land or rights from the adjacent landowner(s), preferably through negotiation to create the active travel route – see Appendix B.

6.7 Rural bus stops on main roads

Where there are high volumes and speed of traffic it will not be appropriate for cycle users to remain on or rejoin the carriageway at bus stops on main rural roads. Provision will be needed to enable off-carriageway routes for walking, wheeling and cycling, to link these modes with bus stops.

Chapter 6 of LTN 1/20 provides detailed treatments of bus stops where there is separate pedestrian and cycle provision, and these can also be applied to rural situations where separate cycle and pedestrian paths are used.

Where a shared use path continues through a rural bus stop there should be provision for people to board and alight safely from the bus on an area of footway, which is not used by cyclists. There should also be a shelter for passengers to wait in that is clear of the shared use path, preferably on the carriageway side of the path, and with windows giving clear visibility along the path.

6.8 Bridges

This section covers provision for active travel on bridges carrying general motor traffic. See Section 10.7 for bridges serving only walking, wheeling and cycle routes.

New over- and underbridges carrying highways should be planned and designed to accommodate proposed active travel routes in accordance with this document.

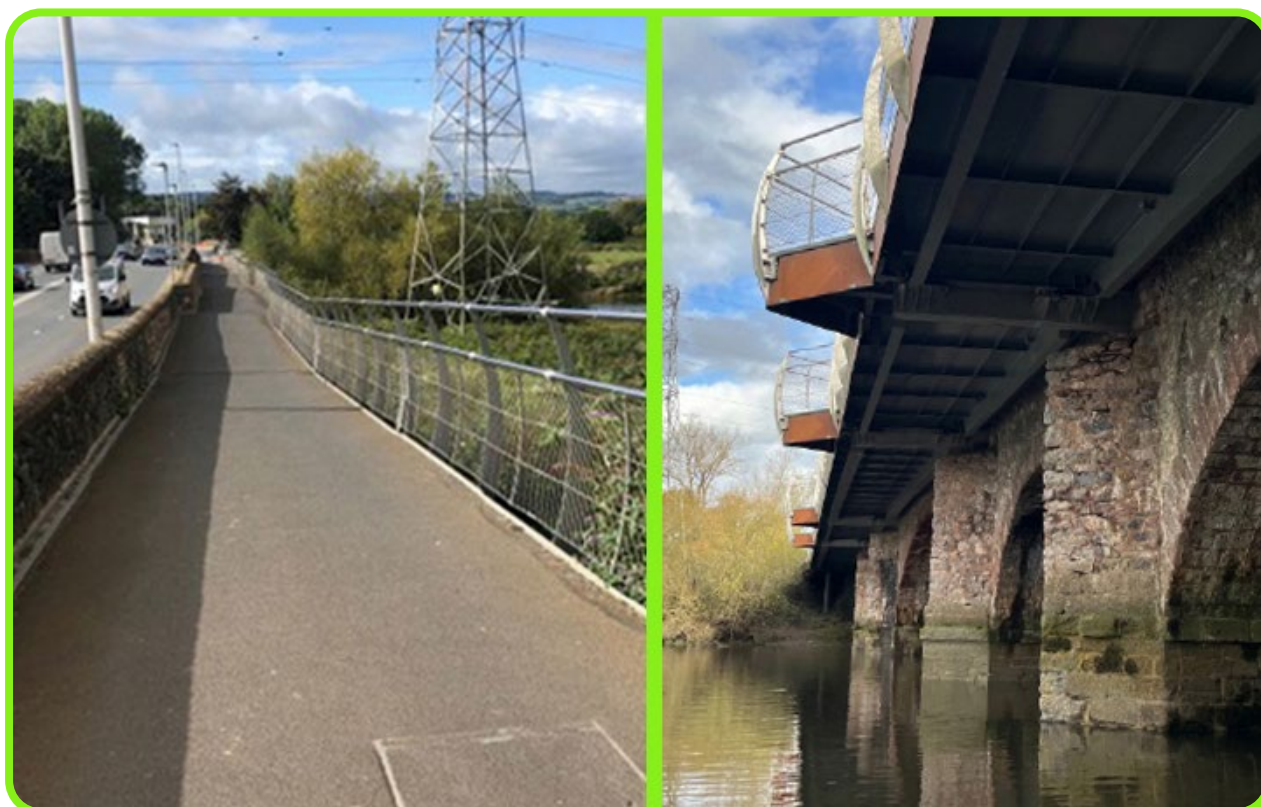
It is unlikely that wide separation from the carriageway will be possible in most cases, and so noise fences may be of significant benefit across structures.

Existing bridges can form significant constraints on the width available, and therefore the ability to provide a continuous protected active travel route. Guidance on the height of parapets on overbridges is given in Chapter 10.

Designers should aim to maintain desirable path and buffer widths through existing bridge sections. Where this is not possible within the existing highway geometry, the following options should be considered:

- reallocation of carriageway width, reducing the width and potentially the number of lanes. Table 7-2 in LTN 1/20 sets out the desirable and absolute minimum widths of general traffic lanes. A local speed limit reduction may be necessary to enable narrower lanes to be used
- the central reservation, if present, could be narrowed, enabling the carriageway to be moved across
- on overbridges, provision could be created by cantilevering the active travel route from the existing structure (see Figure 6.14), or building a new bridge alongside, potentially making use of the sub-structural elements
- on lightly trafficked bridges, general traffic could be accommodated by a single lane, with priority working or shuttle traffic signals, to create space for an active travel route
- vertical barriers capable of restraining a vehicle will provide improved actual and perceived safety where existing buffers meeting LTN 1/20 Table 6-1 cannot be achieved. These should be designed to mitigate noise if noise levels would otherwise be above the values recommended in Section 6.3, but should be designed with visibility and safety in mind
- the width of the active travel facility may need to be reduced locally but should not be below the absolute minimum
- underbridges can feel unsafe for many groups, in particular women and girls. Where they are unavoidable or already present, care needs to be taken around lighting and sightlines at entrances and exits. Detailed engagement with the full range of potential and planned user groups – including people who may be more vulnerable – should be undertaken throughout the design process

Figure 6-15: New active travel route cantilevered from the Countess Wear Bridge, Exeter.





7. Quiet mixed traffic lanes and streets

7.1 Chapter summary

This chapter provides design guidance for quiet highways and byways in rural areas. In this context 'quiet' refers to highways and byways where cycling in mixed traffic is or can be made suitable. Walking and wheeling should generally be accommodated by the provision of separate facilities, however, doing so in mixed traffic may also be suitable where traffic flows and speeds are very low – see Chapter 4.

Many rural areas are served by a network of country lanes which can be used for walking, wheeling and cycling as long as speed, traffic volume and surface quality are suitable.

They may be less direct and have poorer geometry (particularly gradient) than main roads – see Chapter 6. They may be designated and signed as Quiet Lanes – see Chapter 12. Guidance is given on how the speed and volume of traffic can be reduced and protected space created for active travel in a low-cost way. Country lanes can also be important routes for equestrians, whose needs should be considered.

Streets in villages and other rural settlements can be pleasant and attractive places to walk, wheel and cycle. Interventions to achieve suitable traffic conditions need to respect the historic and sensitive nature of their surroundings.

Gateways – see Chapter 12 – can be used to show where the character of a country lane or a road at the edge of a settlement changes to one that is conducive to walking, wheeling and cycling.

Part A: Country lanes

7.2 Introduction

Quiet country lanes include a range of different road types, where traffic flows are generally low and widths are generally narrow. They may be unclassified county roads, other local rural roads or vehicular byways. All of these may provide an opportunity to improve provision for active travel at a low cost and with minimal environmental impact, for example on biodiversity and through carbon emissions associated with construction. Quiet country lanes are typically wide enough to meet the needs of people walking, wheeling or cycling, but may require physical and traffic management modifications to meet the core design principles for active travel routes.

In these environments all road and route users are sharing the same space. It is particularly important to consider the Hierarchy of Road Users and that [the road users most at risk](#) from road traffic are pedestrians, in particular children, older adults and disabled people, cyclists, horse riders and motorcyclists. In any interaction between road users, those who can cause the greatest harm have the greatest responsibility to reduce the danger or threat they pose to others.

When looking at how these country roads are designed, these principles from the Highway Code should be borne in mind, and therefore designs that enable safe use of the space by the most vulnerable road users are an important element of creating rural active travel networks.

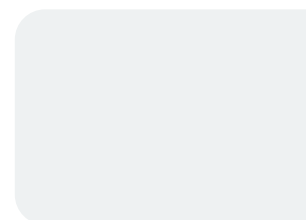
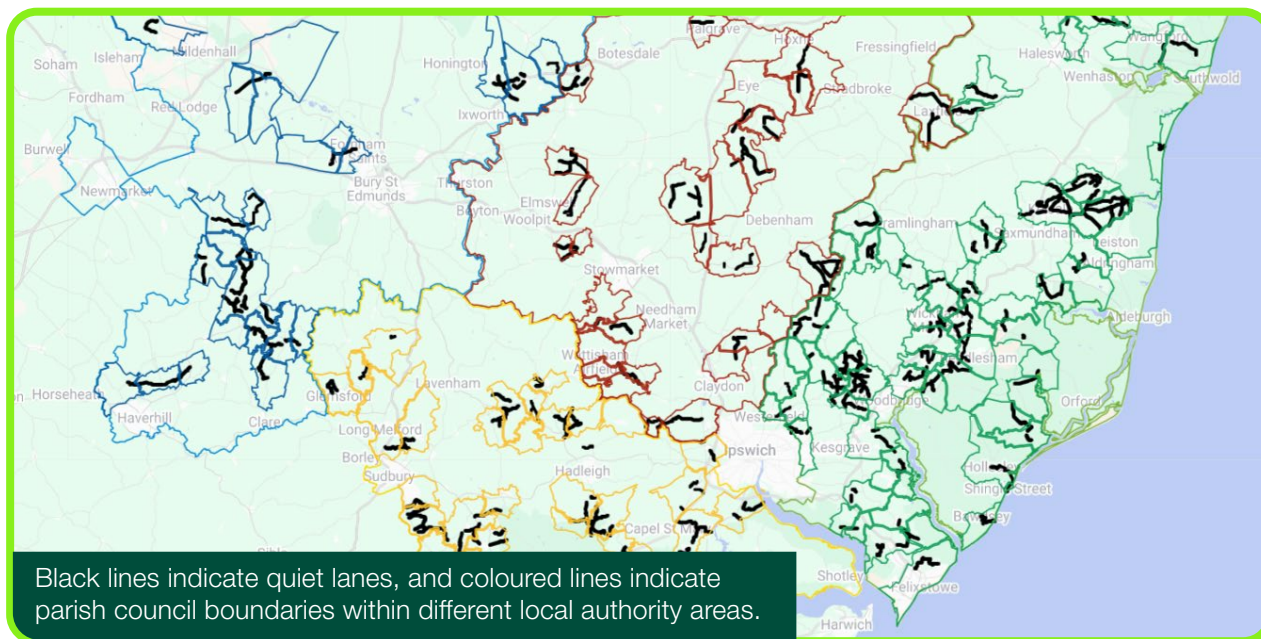


Figure 7-1: A quiet country lane.



Most rural settlements are connected to the country lane network, linking them with major roads, nearby towns and other points of interest, including access points to traffic-free routes. They can therefore directly serve important origins and destinations for both everyday and discretionary trips and form a network covering a wide area. Figure 7.2 shows the designated Quiet Lanes network in Suffolk.

Figure 7-2: Suffolk County Council Quiet Lanes network.



Country lanes mostly pre-date the motor vehicle and therefore have not been designed so much as evolved. They can be indirect and have sharp changes of character, cross-section direction and gradients over a short distance. They may attract significant use by motor traffic, with speeds and volumes that are unlikely to create conditions for attractive walking, wheeling and cycling conditions – see Chapter 4 for recommended values.

Country lanes can see higher vehicle speeds due to factors like sightlines and/or lower traffic volumes, and making them suitable for active travel will also help to improve road safety for all.

Planning consent is not required to make changes to the form and operation of highways. Local highway authorities have powers to carry out improvements under the Highways Act 1980. They can also make orders under the Road Traffic Regulation Act 1984 to limit use to certain classes of user and introduce local speed limits.

Traffic flows and speeds

Most country lanes will not have space for footways or cycle facilities and so people walking, wheeling and cycling will need to feel comfortable using the carriageway, meaning that people are in or close to the 'primary position' as shown in Figure 7-2 of LTN 1/20. There should also be space at regular intervals, at around a maximum spacing of 200m, to enable them to move aside to allow motor vehicles to overtake them comfortably when they need to.

Inappropriate speed (driving at levels below the legal limit but above those appropriate for the road at the time) is a particular issue for smaller rural roads, and the Highway Code instructs drivers to reduce their speed in these circumstances, especially in rules 154 and 155. It warns drivers to be prepared for pedestrians, horse riders, cyclists, slow-moving vehicles and mud on the road. Nevertheless, we know that rural traffic could deter walkers, cyclists and others from greater use of some roads.

Appropriate speed limits should be used as the initial means of reducing traffic speed. Physical changes to the width or layout of country lanes can be more effective in reducing traffic speeds but will be more costly. They should therefore only be used in locations where speeds remain too high, following the introduction of a lower speed limit.

The power to set speed limits and introduce traffic calming and other measures rests with the traffic authority, which has the responsibility of making decisions about the roads under its care, based on its knowledge of the area and local needs and considerations. Guidance for this is offered in [Setting Local Speed Limits](#), which is designed to make sure that speed limits are appropriately and consistently set, however the final decision is for the authority.

Table 4-3 advises that where pedestrians are walking in the carriageway, traffic volumes should be no more than 1,000 vehicles per day (vpd) or 100 vehicles per hour (vph), but this should be regarded as an upper limit. Designers should aim for a much lower frequency of interaction of around a vehicle every 5 minutes, which is around 10 vehicles per hour. This should particularly be considered where there is a high percentage of HGV traffic as these make walking, wheeling or cycling in the road particularly uncomfortable.

Quiet Lanes

Quiet Lanes are country lanes designated under the Transport Act 2000 as important movement routes for people walking, wheeling, cycling, horse riding or carriage driving.

Guidance on the designation and signing of Quiet Lanes is given in Chapter 12.

State of repair

Common maintenance issues with country lanes that are in a poor condition are potholes, edge failures and blocked drainage systems – see Section 14.8.

People walking, wheeling and cycling are more vulnerable to surface defects and flooding than motor vehicles. It is essential that country lanes are in a good state of repair to enable them to be designated as recommended active travel routes. If measures are taken to reduce the volume – and possibly weight – of motor traffic, this will also reduce the cost of future maintenance.

Figure 7-3: Improvements to Rydon Lane, Exeter Green Lanes case study.



7.3 Managing traffic speed

Where people walking, wheeling and cycling share space on country lanes with motor traffic, traffic speed should be no more than around 20mph. This can be achieved through a combination of both non-physical and physical interventions.

Reducing speeds may often also have the effect of reducing traffic flow, as it will make the route less attractive than any main road alternative for regular users.

Non-physical interventions

Speed limit

Most country lanes are derestricted, meaning the national speed limits for different vehicle types apply. While actual speeds are often lower than this, it is important that the speed limit correctly informs drivers of the appropriate speed given the functions of the road. Further guidance on the signing of speed limits and zones is given in Chapter 12.

20mph is the recommended speed limit on routes that form part of the designated active travel network. Even if other measures are necessary to achieve an average speed of around 20mph, such as traffic calming, signposting a higher limit will send a misleading signal to drivers.

General guidance on setting local speed limits is given in [DfT Circular 1/13](#). In considering speed limits along active travel routes, the circular notes that:

“Different road users perceive risks and appropriate speeds differently, and drivers and riders of motor vehicles often do not have the same perception of the hazards of speed as do people on foot, on bicycles or on horseback. Fear of traffic can affect people’s quality of life and the needs of vulnerable road users must be fully taken into account to encourage these modes of travel and improve their safety. Speed management strategies should seek to protect local community life.”

With respect to rural contexts, the circular notes that:

“On rural roads there is often a difference of opinion as to what constitutes a reasonable balance between the risk of a collision, journey efficiency and environmental impact. Higher speed is often perceived to bring benefits in terms of shorter travel times for people and goods. However, evidence suggests that when traffic is travelling at constant speeds, even at a lower level, it may result in shorter and more reliable overall journey times, and that journey time savings from higher speed are often overestimated (Stradling et al., 2008).”

To highlight the issues around road safety on rural roads, the circular notes:

“57% of road deaths occurred on rural roads in 2022, despite rural roads only carrying around 43% of vehicle traffic.”

This pattern has continued since the circular; in 2024, 60% of road deaths occurred on rural roads, while they carried around 45% of vehicle traffic.

Repeater signs are required for 20mph limits, as they are for all speed limits below the national speed limit on unlit roads.

Surrey County Council has set 20mph speed limits on a number of minor rural roads in the county, which were considered to be much more appropriate to their function than the previous national 60mph limit – see Figure 7-4.

Figure 7-4: 20mph speed limit, Tanhurst Lane, Surrey.



Other inexpensive non-physical measures that could be taken to reduce speeds include:

- continuous edge markings (diagram 1012.1 of TSM Chapter 5) are intended for use on unlit roads without raised kerbs. Placing the markings away from the actual edge of the carriageway narrows the apparent width of the road, helping to reduce speeds. Manual for Streets sets out the effect of carriageway width on speed in Figure 7.16. The gap between the carriageway edge and the marking should not be more than 0.5m to avoid giving the impression that it denotes a space for walking, wheeling or cycling
- changing the priority of a junction to interrupt a long straight section of road – see Figure 7-5. Care will need to be taken that drivers on the approach to the junction are informed through appropriate traffic signs or other means that they do not have priority
- centrelines (diagram 1004 of TSM Chapter 5) are typically used on carriageways wider than 5.5m but there is no legal requirement for them. The absence of centrelines has been demonstrated to reduce traffic speeds by around 2mph on low-speed roads
- traffic signs and markings can be used to show to drivers that they may expect people walking, cycling and riding horses in the carriageway and that they should proceed slowly – see Chapter 12

Figure 7-5: Change in priority so that straight ahead route now has to give way.



Physical interventions

Physical interventions to country lanes may be necessary to reduce traffic speeds. They should be sensitively designed using natural materials and in keeping with the local context.

Vertical deflections are not recommended as they are uncomfortable for many people, particularly disabled people, and they can cause grounding for some mobility vehicles with low ground clearance.

Features that can be used to reduce speed on country lanes include:

- a general reduction in the width of the carriageway available to motor vehicles, which can be achieved at relatively low cost by the creation of a virtual footway with protection – see Section 7.6
- gateway features which can include signage and local narrowing/one-way priority (Figure 7-6)
- where cattle grids are required for stock control, provision needs to be made for all users of the active travel route to bypass the cattle grid – see Chapter 8 for more details

Figure 7-6: Gateway with signing and narrowing, North Somerset.



- narrowings on one or both sides, which can be reinforced by the use of bollards (Figure 7-7). Narrowing the verge may provide opportunities for increasing biodiversity or for sustainable drainage features

Figure 7-7: Informal build-outs with bollards and local change in surfacing.



Credit: Walk Wheel Cycle Trust

- a grassed or textured strip in the centre of the carriageway indicates the lane can reinforce the impression that the area is very rural and not for fast traffic (Figure 7.8). This feature can be created by replacing a central strip of surfacing with planting or a contrasting material such as setts

Figure 7-8: Country lane with central grassed strip.



Country lanes can have sharp bends and it is desirable to maintain adequate intervisibility between users for road safety and personal security. This may require the width of verges or extent of vegetation to be cut back around bends where practical.

This should only be done to the degree needed to maintain sufficient visibility consistent with a 20mph design speed, which is a stopping sight distance of 25m (Manual for Streets Table 7.1). Manual for Streets advises that reduced forward visibility is associated with reduced speeds, and that providing excessive forward visibility can lead to higher speeds. Where forward visibility is restricted, traffic calming features may be used locally to achieve appropriately low speeds.

Further guidance on traffic calming is given in [LTN 1/07](#).

7.4 Managing traffic volume

Many country lanes will already have very low traffic flows and may be suitable for designating as active travel routes without requiring further traffic management. Others may already have traffic restrictions, for example weight or width limits, that can be extended to include other types of traffic. Traffic management measures to reduce flows can be applied across a single route or across an area to create a network of country lanes suitable for walking, wheeling, cycling and equestrian use.

Reducing peak motor traffic flows may also have the effect of reducing traffic speed by removing time-critical journeys such as commuting.

Traffic restrictions can be used to control the size and weight of vehicles using routes in addition to the class of vehicle. Restrictions can be time limited, although more complex restrictions may require more enforcement to ensure they are effective.

Where traffic restrictions are proposed as part of an active travel scheme, it is recommended that engagement is undertaken with all relevant parties to ensure that the most appropriate measures are selected.

Point closures

Point closures to motor vehicles, also known as modal filters, are the most effective means of reducing traffic flows – see Figure 7.9.

Physical modal filters should be designed using bollards or other physical features with one or more 1.5m-wide gaps to accommodate large cycles, horse riders and mobility scooters to pass through. Where horse-drawn carriages are identified as route users through consultation, a different width may be required. Staggered barriers should not be used as they are difficult or impossible for such users to negotiate. Further advice on bollards for routes with large numbers of equestrian users is given by the British Horse Society in [“Advice on barriers on routes used with horses”](#).

The need for turning heads at the point closure should be avoided if possible as this may require land beyond the highway boundary. Restrictions and alternative routes should be well signed in advance so that drivers are aware in time to make decisions. The start and end of lanes closed to through motor traffic should preferably be at a junction or other decision point where a driver is able to alter their route without needing to reverse.



Figure 7-9: Rural modal filter introduced via an experimental traffic regulation order, Queen Charlton (Bath and North East Somerset).



Exemptions to the restrictions can be made for access by essential traffic and emergency services. This can be achieved using a gate, which may not need to be locked to be effective in removing general traffic. Where gates are proposed, consultation should be undertaken with emergency services to ensure that their use is appropriate and well-managed.

Figure 7-10: Traffic filter with gate for local access, Knaresborough.



Access to private premises along a route can be achieved by providing two accesses to a site, either side of the point closure. This method was used to maintain access to a school on Hollow Lane in Exeter – see the Exeter Green Lanes case study.

Access-only restrictions

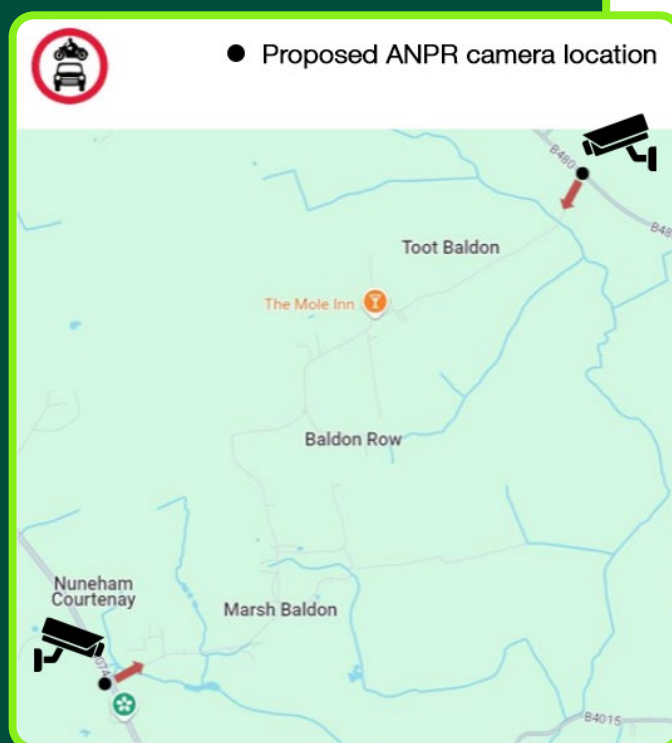
Modal filters can also be delivered through traffic signed access-only restrictions that are signed using a 'Motor vehicles prohibited' sign (diagram 619 of TSM Chapter 3) and an 'Except for Access' plate can be used to reduce motor vehicle traffic along a route. They can be beneficial where the lane provides access to a small number of properties, or where agricultural access to land needs to be maintained.

Access-only restrictions have been problematic to enforce, in part because 'access' can be difficult to define. Local authorities with the powers to enforce moving traffic offences can use camera enforcement systems either side of the restriction to detect vehicles that have driven through an area without stopping. However, this may not be suitable where the access-only restriction covers a wider area. Further guidance on the use of the 'Except for access' plate is given in TSM Chapter 3.

Where only a few premises take access from the area covered by the restriction a permit system could be used, with an 'Except for permit holders' plate under the 'Motor vehicles prohibited' sign. This could be enforced by a single camera at the restriction point, with a 'white list' of vehicle registration numbers exempted from the traffic order.

Figure 7-11: Proposed camera enforcement of access-only restriction, Baldon Lane, Oxfordshire.

CCTV camera enforcement is proposed by Oxfordshire County Council to enforce an access-only restriction on Baldon Lane through Marsh Baldon – see Figure 7-11. A minimum journey time has been calculated based on the posted speed limits, plus an allowance for potential delays along the route. Penalty notices will be issued if vehicles complete the journey faster than this minimum time, as they are considered to be in breach of the access-only restriction.



One-way working

The introduction of one-way working for motor vehicles on rural lanes may be beneficial in reducing conflict with people walking, wheeling, cycling and horse riding, particularly on routes where carriageway widths do not easily allow for two motor vehicles to pass frequently. A network of one-way lanes could be designed to facilitate access while preventing or discouraging through traffic. This could be achieved with the introduction of short sections of one-way working as filters or the use of false one-way streets, as outlined in TSM Chapter 3. However, one-way working can lead to increases in vehicle speeds, and care in their application is advised.

In low-traffic, low-speed environments, it is normally possible to accommodate contraflow active travel movements along country lanes. Advice given in LTN 1/20 on contraflow cycling also applies to rural areas and can be more widely applied although engagement with user groups is recommended to confirm exact approaches to application in a local context.

Trials

Trials can be a useful way of assessing the impact of any displacement of traffic due to changes in traffic management. Simple traffic modelling based on reassigning all vehicles will not reflect the fact that some evaporation of traffic is likely to occur.

Trials should be put in place by the use of experimental traffic regulation orders (ETROs) – see the Exeter Green Lanes case study. They can be put in place more quickly than permanent orders, as they have only a seven-day notice requirement before they can be made. Early engagement with local communities and adjacent landowners prior to making any ETRO is critical to the successful introduction of any schemes which seek to restrict motor vehicle movements.

Once the ETRO is made, there is a statutory objection period of six months. During this time, statutory consultees must be consulted as per the [TRO procedure regulations](#), and schemes should be monitored and evaluated to help make decisions as to whether the scheme should be made permanent and, if so, in what form. An ETRO can last for a maximum of 18 months, after which they must either be made permanent or revoked.

It is advisable that a consultation period of at least one year should normally be used to enable people to adjust their travel behaviour following the introduction of the restrictions and to see how the scheme operates at all times of the year.

Further guidance on the use of ETROs, and engagement in general, is provided in ATE's [best practice guide to community consultation and engagement](#).

7.5 Typical cross-sections

The existing carriageway width of country lanes varies significantly and has a bearing on how people walking, wheeling and cycling will interact with motor vehicles, as well as on the speed of traffic. Figures 7.12 to 7.18 show examples of possible treatments, based on different carriageway widths. All of these examples assume low traffic flows and speeds, in accordance with the recommended values given in Table 4-3.

These example cross-sections are based on the following width parameters:

- minimum width for walking and wheeling, generally – 1.5m
- minimum width for walking and wheeling at pinch points (minimum absolute) – 1.2m
- maximum width for walking and wheeling – 2m. Greater widths may appear to drivers as traffic lanes (there are no prescribed road markings which denote pedestrian space)

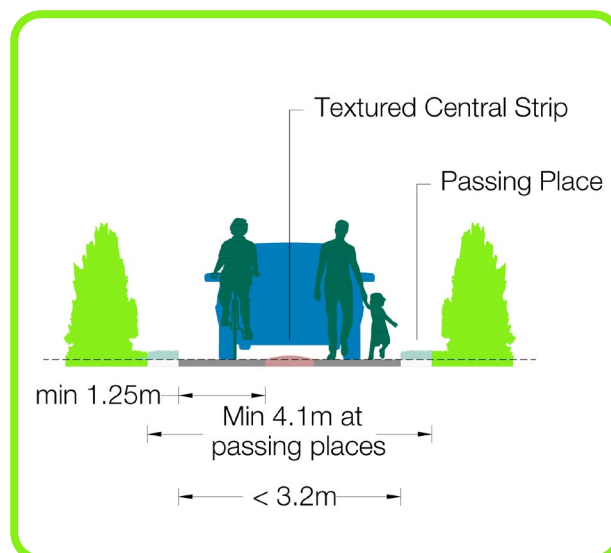
- minimum width for one-way cycles and mobility scooters – 1.25m
- minimum width for two-way cycles and mobility scooters – 2.5m (road markings to diagram 1057 TSM Chapter 3 can be used to denote cycling space)
- minimum traffic lane width for motor vehicles, based on tractor width – 2.6m
- minimum width for two light motor vehicles to pass – 4.1m
- motor lane widths on two-way carriageways between 3.8m and 4.1m should be avoided as it is not clear whether the space is wide enough for two vehicles to pass

The available space along country lanes may vary and so treatments may need to change from location to location, but this should be minimised through careful design.

Existing carriageway width less than 3.2m

On lanes with narrow carriageways of less than around 3.2m, cyclists and horse riders will be able to maintain primary position since there is inadequate width for motor vehicles to pass them easily. Two motor vehicles will not be able to pass without leaving the carriageway.

Figure 7-12: Country lane – carriageway width less than 3.2m.



If a textured or grassed central strip is used, a smooth surface of an absolute minimum width of 1.25m should be provided either side to allow for access by people using wheelchairs, mobility scooters or riding tricycles or other large cycles.

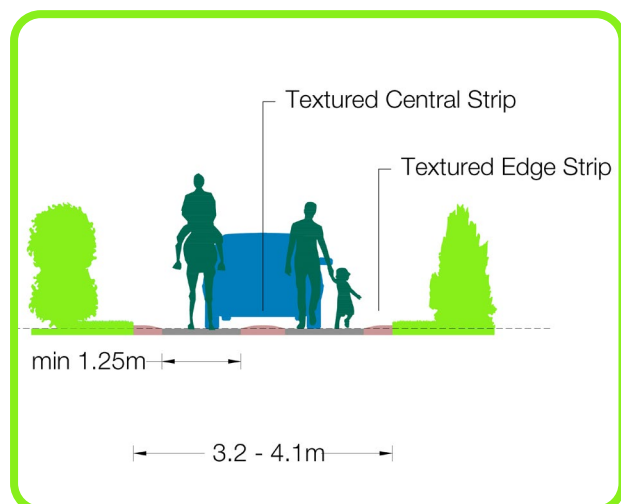
Unless traffic flows are very light it will be desirable to provide regular opportunities, at around a maximum spacing of 200m, for people to move aside when a motor vehicle passes through, and for two motor vehicles to pass. For cyclists, these are most important on the left in the uphill direction as they will be travelling more slowly.

This may be done at low cost by paving informal passing places that have already been created by vehicles. An overall minimum width of 4.1m will allow two light vehicles to pass one another, so providing these widenings opposite one another will provide convenient passing places. Passing places should where possible be located so that there is intervisibility between them.

Existing carriageway width 3.2 to 4.1m

Carriageways with an overall width of 3.2m to 4.1m fall mostly into a range whereby cyclists and horse riders have more difficulty maintaining primary position but there is not sufficient room for a motor vehicle to pass them with comfort. There is also insufficient width for two light vehicles to pass each other.

Figure 7-13: Country lane – carriageway width 3.2m to 4.1m.



It will be desirable to narrow the carriageway to a maximum width of 3.2m to enable cyclists and horse riders to ride in primary position, ideally by replacing the edges of the carriageway with textured or grassed strips, which can be overrun by large agricultural vehicles. The latter will be less expensive and will increase biodiversity. Alternatively, edge of carriageway markings to Traffic Signs Regulations and General Directions 2016 (TSRGD) diagram 1012.1 could be used, desirably reinforced by occasional bollards (see virtual footway/cycle track options below). It will be desirable to provide regular widenings where people can move aside and two vehicles can pass.

Existing carriageway width greater than 4.1m

Carriageways over 4.1m wide will enable two vehicles to pass but, if left untreated, the greater width will make it more difficult for pedestrians and cyclists to feel comfortable when motor vehicles wish to pass and may lead to increased traffic speeds.

Figure 7-14: Country lane – carriageway width 4.1–6m.

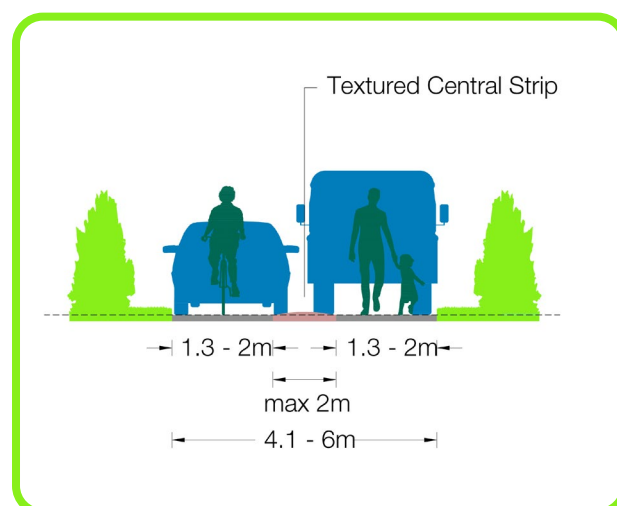


Figure 7.14 shows how carriageways up to 6m in width could be redesigned with a wider central strip to create narrower areas on either side for people to walk, wheel and cycle. The desirable maximum width of these three areas is 2m so that they do not read to users as a motor vehicle lane. Constructing the central strip from a different and textured material will help reduce traffic speeds since one wheel of cars and larger vehicles will need to run on it.

Implied footways/cycle tracks

Figure 7-15: Country lane – carriageway width greater than 4.1m, with implied footway.

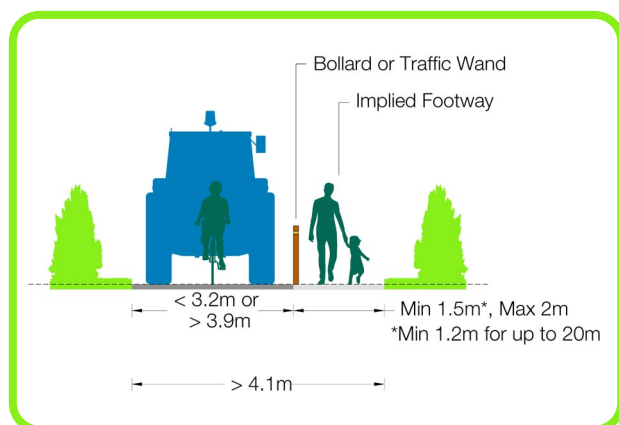


Figure 7.16 shows an alternative arrangement where a protected implied footway is used to narrow the space for motor vehicles and cyclists to a single lane. Guidance on the desirable maximum speed and flow of motor traffic for this arrangement is given in Table 4-3.

The footway space should be defined by a continuous line marking to diagram 1012.1 (edge of carriageway), reinforced by occasional bollards, desirably constructed of sympathetic materials such as timber. Bollards should be spaced at up to around 40m apart, with road users always being able to see a bollard ahead. When motor vehicles meet on the single traffic lane, one can pull into the virtual footway to enable them to pass. Larger occasional agricultural vehicles will need to encroach onto an overrunnable verge.

To make an implied footway more conspicuous, it may be beneficial to apply a surface dressing in a colour that provides good contrast against the adjacent area of carriageway.

This approach is used extensively in Jersey – see the Jersey Green Lanes case study. The same technique has been used in some places in the UK – see Figure 7.16.

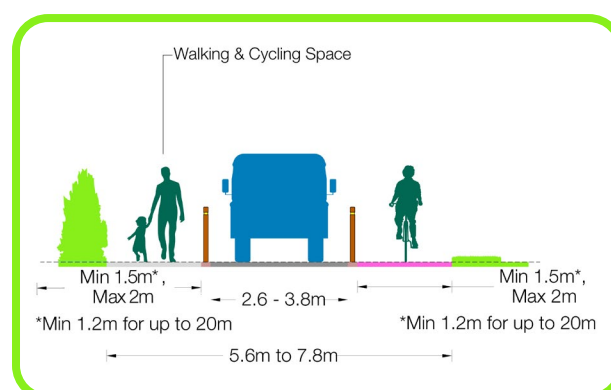
Figure 7-16: Implied footway protected by wands, Surrey.



Guidance on the design of transitions at the start and end of virtual footways is given in Chapter 9, and the use of road markings in Chapter 12.

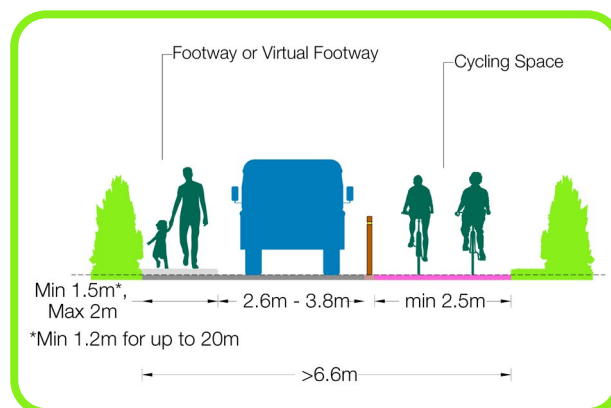
Where a minimum width of 5.6m is available, implied footway/cycle tracks could be provided on both sides of the road, with a 2.6m wide general traffic lane in the centre.

Figure 7-17: Country lane – carriageway width 5.6–7.8m, with implied footway/cycle tracks.



With a minimum width of 6.6m, a two-way implied cycle track on one side can be provided.

Figure 7-18: Country lane – carriageway width greater than 6.6m, with implied cycle track and footway.



Part B: Streets in rural settlements

7.6 Introduction

Villages and small towns can be excellent places to walk, wheel and cycle. Their physical size means that few journeys are longer than typical active travel trips, and traffic can be light and slow so that cycling – and in some cases walking and wheeling – on the carriageway is comfortable for most people.

Figure 7-19: Buriton, Hampshire – tightened geometry using sympathetic materials.



Streets in historic settlements are often constrained and may not meet the recommended geometric standards for motor vehicles, and it will rarely be possible to create separated space for cycling. In many places there may not be space for a footway.

However, if traffic conditions are or can be made suitable (see Table 4-3), there is usually adequate space for people to walk, wheel and cycle in comfort and safety.

Guidance on the appropriate values for traffic speed and volume for on-carriageway cycling and on-carriageway walking are given in Chapter 4. In both cases, traffic speeds should be no more than 20mph and flows should be no more than 2,000 vehicles per day (cycling) and 1,000 users per day (walking and wheeling). Achieving slow speeds is the most important factor since this directly reduces both the actual and perceived risk from traffic, as well as noise impacts.

The quality and character of rural settlements is important, both to the people that live there and to visitors, who may be critical to the local economy. Designated areas and individual buildings may be protected through conservation areas and listing, and a sensitive approach should be taken to any measures designed to manage traffic. Generally, the approach should be to reduce sign and markings clutter so that the quality of the place can be seen.

The following are examples of design guidance developed by local areas:

- [Traffic in Villages](#)
- Kent Downs [Rural Streets and Lanes: A Design Handbook](#)
- [Roads in the South Downs](#)
- Northumberland Coast [Highway & Public Realm Design Guide](#)
- the [Historic Core Zones project](#)

7.7 Managing traffic speed

For active travel to be safe and comfortable, vehicle speeds of 20mph or lower are safer when mixing with motor traffic including in small towns and villages. Setting a consistent speed limit across a settlement removes uncertainty for drivers as to what the local limit is, increasing its effectiveness. Local traffic authorities have the power to introduce 20mph limits where people and traffic mix and this is particularly supported around schools or where walking, wheeling and cycling levels are high. Local authorities are best placed to decide where such limits will work effectively based on local conditions and community needs.

While the nature and geometry of each road should be assessed individually, a whole-settlement 20mph limit, where appropriate, may prove cheaper than one which excludes its main radial routes since there will be no need for gateway signs on every side road.

Lower speed limits, particularly 20mph, help to minimise the impact of signs and road markings in rural environments by reducing the size of signs and markings needed.

Highway/road authorities that have a policy of setting whole-settlement 20mph speed limits in rural areas include Oxfordshire, Cornwall and road authorities across Scotland.

Scottish Borders Council introduced permanent 20mph speed limits across 97 small towns and villages in 2023, after [a two-year trial which demonstrated their effectiveness](#). In Wales, in the first year after the introduction of a default 20mph speed limit for lit roads, which meant that most villages became entirely 20mph, there was a [26% reduction in casualties in the roads affected](#).

As with country lanes, while 20mph speed limits are the most beneficial for active travel, additional interventions may be required if speeds remain high. Centreline removal can be a very useful and cost-effective technique, which was used to good effect in Pembridge, Herefordshire, in conjunction with edge of carriageway markings and the introduction of a 20mph speed limit. Centreline removal has been used successfully on busy urban roads, including a section of the A232 in south London, which carries 20,000 vehicles per day.

Other more place-led interventions can be made based on [the principles of psychological traffic calming](#), or ‘controlled ambiguity’, which generally influences drivers’ choice of speed by reducing their degree of confidence and increasing engagement with their surroundings.

Features can include junctions where priority is removed but circulatory priority is implied by the shape of the paving – see Figure 7-20.

Figure 7-20: An informal roundabout in Bodmin, Cornwall.



Continuous footways and courtesy crossings across side roads can give comfort and precedence to people walking or wheeling and reduce the speed of turning vehicles – see Figure 7-21. They therefore reinforce the expected behaviour of drivers under Rule 170 of the Highway Code.

Figure 7-21: Courtesy crossing, Bodmin.



Simple changes can also be made to improve conditions for walking, such as introducing build outs in a run of on-street car parking to create places where it is safe and comfortable to cross the street. These should extend beyond the parked vehicles to provide adequate visibility. Care needs to be taken to make sure this does not introduce a pinch point for on-carriageway cyclists.

7.8 Managing traffic volume

Achieving low traffic flows that meet the recommended values in Chapter 4 may be difficult in some circumstances, on main streets in rural settlements when there are no alternative routes for motor traffic.

However, in other places there may be parallel routes leading to and/or through a settlement. In such cases it may be possible to use traffic management techniques such as direction signing and weight restrictions, to reduce motor traffic on one route, making it suitable to be signed as the recommended route for active travel. Ideally this would be the street where key destinations such as shops are located.

Pedestrianisation, by definition, creates spaces that are extremely attractive for people to move around by walking and wheeling, and potentially by cycling – see LTN 1/20 Section 7.4. However, pedestrianisation may be difficult in the centre of smaller settlements due to the absence of alternative routes. Consideration could be given to timed vehicle restrictions, such as on Saturday mornings, when footfall is highest and the economic benefit to businesses will be maximised.

Control of parking and loading

The management of parking in towns and villages can be critical to the success of schemes looking to promote greater use of active travel modes. Inappropriate parking of vehicles can restrict carriageway widths, particularly along narrow streets and lanes found in and around rural settlements, which reduces the attractiveness and safety of routes for active travel.

The design of measures to control parking, particularly with regards to on-street parking within settlements, must be undertaken with sensitivity to the context within which the scheme will be delivered.

More space can be given for pedestrians where car parking can be reduced or removed (other than disabled parking) from the centre of a rural town, the results can be transformative in creating a space for people to socialise.

Guidance on how the visual impact of waiting and loading restrictions can be minimised is given in Chapter 12.





8. Motor traffic-free routes

8.1 Chapter summary

Most rural areas are served by a network of routes away from roads, which in this document are described as motor traffic-free routes. Such routes have also commonly been termed greenways, which describes their nature but has no legal meaning. It also describes routes that have some very limited use by motor vehicles for access, maintenance or in emergencies.

Not all users may be able to use existing motor traffic-free routes because of limitations of the rights associated with these routes, or physical attributes including geometry, surface quality, gradients and access controls.

However, they can often be made usable for walking, wheeling and cycling at a reasonable cost, and/or augmented with new routes away from roads carrying motor vehicles.

Such routes can form important links for everyday trips. They are likely to be particularly beneficial in the rural context where roads between settlements often carry motor traffic in high volumes and/or at high speed, and there is limited space within the public highway to provide suitable facilities – see Chapters 6 and 7.

8.2 Introduction

This chapter covers the creation and design of routes in rural areas which are separate from public highways and largely free of motor traffic. These include routes on disused railway lines, through parks, private estates and public open space, across open countryside, on canal and riverside paths, and along PRow. User groups permitted to use PRow (separated from motor traffic) are summarised in Table 8.1 below.

Table 8.1: Table showing permitted PRow users.

PRow Type	Pedestrians	Cyclists	Horse riders	Horse-drawn vehicles
Public Footpath	Yes	No	No	No
Public Bridleway	Yes	Yes	Yes	No
Restricted Byway	Yes	Yes	Yes	Yes

This table is only a guide as individual landowners may permit additional user types on paths on their land. In addition to the above, byways open to all traffic allow these user groups and motor vehicles, and so guidance in Chapter 7 (Quiet Mixed Traffic Lanes and Streets) may be more appropriate for active travel routes using these.

Motor traffic-free routes form a significant part of the rural movement network, where a wide range of route types are frequently found. Where new or improved routes are proposed as part of an active travel network they should follow the core design principles set out here and in Chapter 4, and be integrated within the wider transport network.

Many new motor traffic-free routes follow existing corridors, such as disused railways and canals. However, with landowner permission or through the acquisition of land and/or rights it is possible to create entirely new routes that are fully separated from motor traffic and accessible to a wide range of people.

Motor traffic-free routes are attractive to those who prefer a quiet experience. They can benefit nature in ways that include:

- providing opportunities to increase biodiversity and water management
- allowing for the planting of new trees and hedges that can help mitigate noise and air pollution
- offering safe passage for wildlife and create opportunities for habitat restoration, allowing healthier ecosystems to develop

These routes are away from motor traffic and the direct impact of air, noise and light pollution. They also support rural economies.

However, it needs to be recognised that greenways, in particular those which pass through cuttings or use canal paths, may not have much natural surveillance. This can make them feel unsafe for women and girls, particularly after dark, and may also have the potential to attract crime.

Motor traffic-free routes that form part of cohesive active travel networks must be inclusive and cater for the needs of as wide a range of users as possible. As part of this, separation of modes is still advised, particularly where use is likely to be high.

However, for many inter-urban routes where user is likely to be low a shared approach may well be appropriate. An inclusive route will ensure that all users can use routes throughout the year and have convenient access with no obstructions. Further guidance on key design choices and inclusivity is given in Chapter 4.

Where improved routes are created along existing routes with rights of access for horse riders or carriage drivers, these routes must accommodate their needs. Along new routes it may also be appropriate to design for these users, which should be considered early on in the design process. Design principles for paths shared between people walking, wheeling, cycling and equestrians is given in Chapter 4.

Routes can provide utility, recreation, and tourism functions. They have the potential to become important destinations in their own right, attracting people to the area just to experience the route.

Routes need to be well maintained and kept free of vegetation during the spring and summer growing seasons, and leaf debris, ice and snow in the autumn and winter.

8.3 Planning motor traffic-free routes

The need for new or improved routes may be identified through a Local Cycling and Walking Infrastructure Plan (LCWIP) or Rights of Way Improvement Plan, which may include an audit of the accessibility of these routes. Additionally, the RDR process set out in Chapter 3 can support in the planning of new routes and networks by helping to demonstrate the need exists, and to consider the opportunities which might be derived from a new or improved motor traffic-free route.

This process will also show how a new or improved route or network can benefit a community and address any potential impacts on the environment or existing infrastructure. Delivery of these routes may require land acquisition and planning consents which will need to be justified, although these may not be required where proposals seek to enhance existing PRow. The relevant Rights of Way Improvement Plan for the areas needed should be consulted.

Creating a traffic-free route may involve negotiations with one or more landowners to reach agreements to acquire the legal rights and/or permissions to enable the creation of a route. These can be acquired by outright purchase, exchange or a gift of land to become the new landowner, by leasing land, or by licence or permission granted by a landowner. Each type of legal transaction or agreement has different characteristics. PRow may already exist and can also be created by highway and other authorities, using statutory powers.

Advice should be sought from qualified professionals at the early stages of route development to check the legal status of existing and proposed routes, and provide support with landowner negotiations.

For detailed guidance on the options open to local authorities to acquire land and rights, see Appendix B.



8.4 Designing motor traffic-free routes

Motor traffic-free routes need to be designed for their intended use and local context. As discussed in Chapter 4, many inter-settlement routes with high levels of recreation and leisure use could be designed as shared-use paths. Some sections might need to be separated where use is particularly high or where a range of modes will use a common stretch of path. The design of any route should consider seasonality, particularly in areas where there is likely to be significant use by tourists.

Utility routes within settlements, particularly where high levels of use are likely, should include separated facilities for pedestrians and cyclists.

To achieve their full potential, motor traffic-free routes need to be designed and maintained to a high standard, particularly in terms of surfacing and accessibility. The implications of design choices on surfacing and lighting are discussed in Chapter 4. Routes should be surfaced in a well-maintained and defect-free material suitable for walking, wheeling and cycling, preferably in a bound material. Routes should not include sections that are uneven and unsurfaced. Lighting may be beneficial, but is not considered to be essential, particularly as there can be environmental and ecological constraints on lighting routes away from the road network. Further guidance on lighting is given in Chapter 14.

Gradients along and across routes is a key design consideration. As noted in Chapter 4, it may not always be feasible to achieve desirable gradients, particularly where existing routes are being improved and need to follow existing topography. Where new routes are being created there may be a greater opportunity to consider the design of a route, including its alignment, in order to better meet the desirable values given in Chapter 5.

Many of the UK's multi-user traffic-free routes follow disused railways or canal towpaths, which by their nature follow gentle gradients. This promotes inclusivity, making journeys easier and more accessible for a wider range of users.

However, there may also be disadvantages to following these existing linear features. More so than other traffic-free routes, their historic alignment and separation from other networks may mean they have no direct connection with nearby settlements. There may also be challenges where the feature is grade separated from the surrounding landscape such as in either a cutting or on an embankment. Along such routes designers should consider how new access points might be formed, either directly or indirectly, to improve connectivity.

The lack of escape routes and poor natural surveillance may impact both safety and perceptions of safety, deterring some user groups such as women and girls or disabled people from using motor traffic-free routes, as they may not be well overlooked. As noted above, access points may be far apart and the route may be separated by level from its surroundings. This may lead to anti-social behaviour, crime and/or the fear of crime. Achieving a good level of social safety should be considered from the start of the design process and engagement needs to be a core part of this.

Particular care needs to be taken with access points to ensure that they link to safe areas with good natural surveillance and avoid potential issues. There may be heritage or ecological constraints on some routes, and sections with restricted widths. Timed access restrictions may apply to routes through parks and private estates. Designers need to understand these constraints and possible mitigations if necessary.

Wayfinding is a particularly important feature of motor traffic-free routes. This is because they do not typically benefit from many of the features which aid wayfinding along the road network, such as road names and numbers. However, some motor traffic-free routes will appear on OS maps if designated as PRow. Wayfinding must be integrated as a core component in the overall design. For more information see Chapter 12.

In designing motor traffic-free routes, designers should consider space and infrastructure so that people can stop and rest along their journey – see Chapter 11.

8.5 Types of route

The following route types are discussed below, including common constraints, legal processes and key stakeholders to involve in planning and designing schemes. These are:

- converted footpaths
- bridleways and restricted byways
- canal towpaths
- new highways
- rivers, coasts and flood defences
- disused railways
- operational and heritage railways
- woodland and forest paths
- private estates and public parks
- other recreational and amenity spaces

End-to-end routes may pass through more than one of these routes, and some may fall into multiple categories, such as a bridleway through woodland or along a flood bank.

8.6 Converted footpaths

Typical features

Public footpaths are common features in rural landscapes. These routes give users a right of access only when walking or wheeling.

Figure 8-1: Section of the Cornwall Coastal Path which has been converted from a footpath to a shared-use path for walking, wheeling and cycling.



Many public footpaths are currently unsuitable for wheeling or cycling. Reasons why they cannot form part of the designated active travel network include because they:

- are unsurfaced
- are narrow
- follow existing topography with only limited interventions to address steep gradients, such as steps
- incorporate access control features, such as gates, stiles and steps

Where footpaths are identified as forming important elements of a rural active travel network, it may be appropriate to consider how a wider range of users could utilise the alignment.



Approaches

Footpaths can be converted to bridleways or cycle tracks through legal processes. A Cycle Track Order, a Public Path Order, or a Definitive Map Modification Order (DMMO) is required to change the designation of the route.

A DMMO would only apply where there was evidence that bridleway rights historically existed or had been established through usage of a footpath by horses and cyclists over a period of time. Converting a footpath to a bridleway or cycle track is easier with landowner consent, but this is not essential. A landowner can vary rights across their land by the process of express dedication. Changes in the legal status of routes can mean legally protected rights of access are lost. See Appendix B for further guidance.

Planning and design considerations

Existing users will be required to share the route with people travelling by other modes, although this is likely to be offset by improvements to path widths and surfaces. Works carried out on footpaths may benefit from permitted development rights enabling a faster implementation of active travel improvements.

However, a public consultation may be required, which could have an impact on the programme. Significant objections (including any change of status from a footpath) may mean a different approach to the development of the active travel route is needed.

Routes may be used for or pass through areas with agricultural activities including access to land and the movement of livestock, so access controls such as gates or cattle grids may need to be considered. Use of access controls should be justifiable, and they should be as accessible as possible for all users.

The routing of paths may need to be altered in addition to changing the legal rights of use. Footpaths may cross fields and farmyards on alignments where it would be impractical to introduce a wide, level and surfaced path. Again, where this is the case extensive public engagement and consultation should be undertaken with all relevant parties.

Footpaths may pass along routes which also provide vehicle access to private dwellings and land. Route designers will need to understand the legal rights of access and establish responsibilities for maintenance along shared sections. Landowners or occupiers and those using motor vehicles along these routes are usually responsible for repairs needed due to wear and tear.

Partner organisations include:

- local authorities
- landowners
- local communities
- action groups such as the Ramblers, cycle campaigners, and the British Horse Society
- statutory consultees depending on approach

8.7 Bridleways and restricted byways

Typical features

Bridleways and restricted byways are also common features in rural landscapes. The public has a right of access along these routes for walking, wheeling, cycling and horse riding. Horse-drawn carriage driving is also permitted along restricted byways.

Figure 8-2: Public bridleway, Peak District National Park.



Although often wider than footpaths, many routes cannot be included in the designated active travel network without improvement as they are unsurfaced and follow existing topography. Works carried out on bridleways may benefit from permitted development rights enabling a faster implementation of active travel improvements.

These routes are generally free of stiles and steps, but gates are common on bridleways, particularly where these routes are also used for agricultural activities including access to land and the movement of livestock.

Approaches

Routes already benefit from legal rights of access needed to be included in the active travel network. The key considerations for improvement are typically around route widths and surfacing.

Bridleways are highways that are mostly maintained at public expense. In most cases, the local highway authority is responsible for maintaining these routes and removing obstructions.

The authority does not need to facilitate the use of a bridleway by cyclists, but it has discretionary powers to improve rights of way.

Landowners may also change or improve the surfaces of bridleways, but this requires local highway authority consent.

Planning and design considerations

Designers should aim to achieve a minimum width of 3m on surfaced paths along bridleways and restricted byways, as set out in Chapter 5.

The only statutory widths for rights of way relate to reinstatement following ploughing and cropping. In all other cases the width may need to be determined on an individual basis. This could be based on the following:

- the width set out in any legal document
- the width of a route may be the full width of a way bounded between hedges or fences
- the width may be that which the public has customarily enjoyed

As with converted footpaths, routes may be used for or pass through areas with agricultural activities, so may need access controls. Use of access controls should be justifiable, and they should be as accessible as possible for all users. Considerations on routing, legal rights of access, maintenance responsibilities and partner organisations apply as for converted footpaths.

8.8 Canal towpaths

Typical features

Canal towpaths are found alongside engineered waterways designed for navigation, water transport for irrigation or power, and for water management. Towpaths were formed to allow boats to be pulled along these waterways.

Figure 8-3: Canalside showing front verge, towpath and back verge.



They are typically level or with gentle gradients and provide connections between larger settlements in rural areas. However, they may bypass smaller settlements. As the routes were usually constructed along the most level routes through the landscape, they may not be direct and may be longer than routes following other roads or paths.

Canal towpaths are shared spaces for use by people walking, wheeling and cycling, but with priority often informally given to pedestrians through means such as the Canal & River Trust [Towpath Code](#). There may be some sections that are rights of way, but towpaths are usually permissive paths. Motorised vehicles and equestrians are generally not allowed to use canal towpaths, although horse-drawn boats are typically permitted, and equestrians can use canal towpaths where they are definitive bridleways.

As well as people travelling along these routes, the front verge alongside the canal may also be used to moor boats and by anglers.

Approaches

Including towpaths within active travel schemes should be straightforward legally, as the routes already permit use by people walking, wheeling and cycling.

Towpaths are typically not publicly owned, so any work will require landowner and possibly also planning consent.

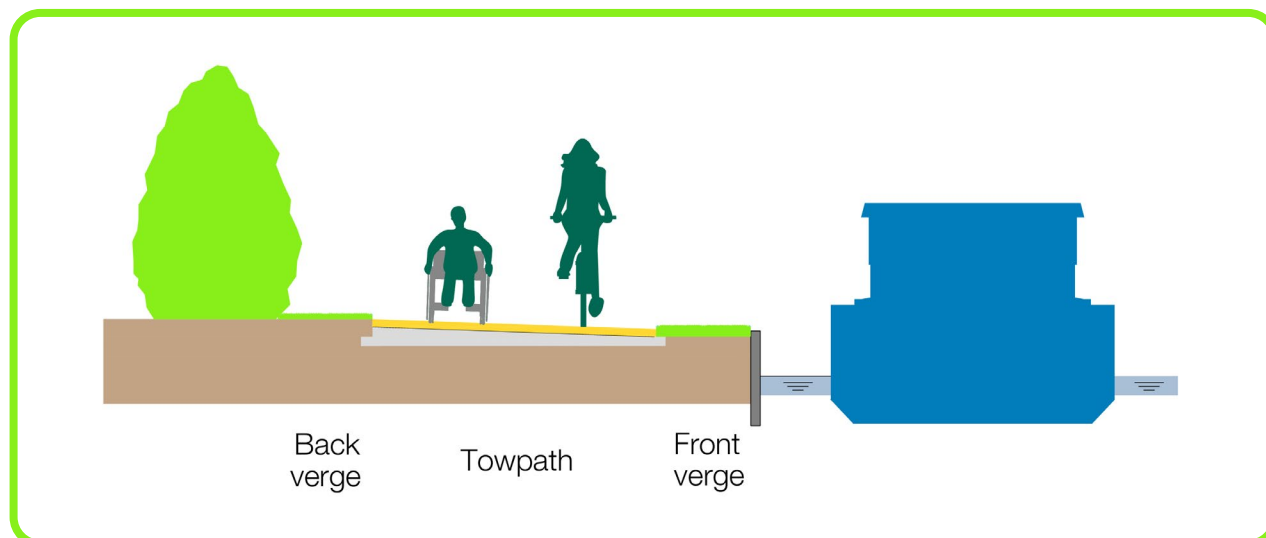
However, because of their narrow profile and often infrequent access points, these can feel unsafe for women and girls, particularly after dark. Consideration should be given to providing alternative, lit routes where possible.

Planning and design considerations

Canal towpaths have particular space requirements and design challenges.

The space alongside a waterway is typically divided into three sections, which are a front verge, the towpath itself and the back verge. The front verge and the water's edge provide space for mooring pins and for anglers to sit, and can also be an important habitat for wildlife. The back verge provides a setting to vegetation at the edge of the canal corridor and additional space for biodiversity.

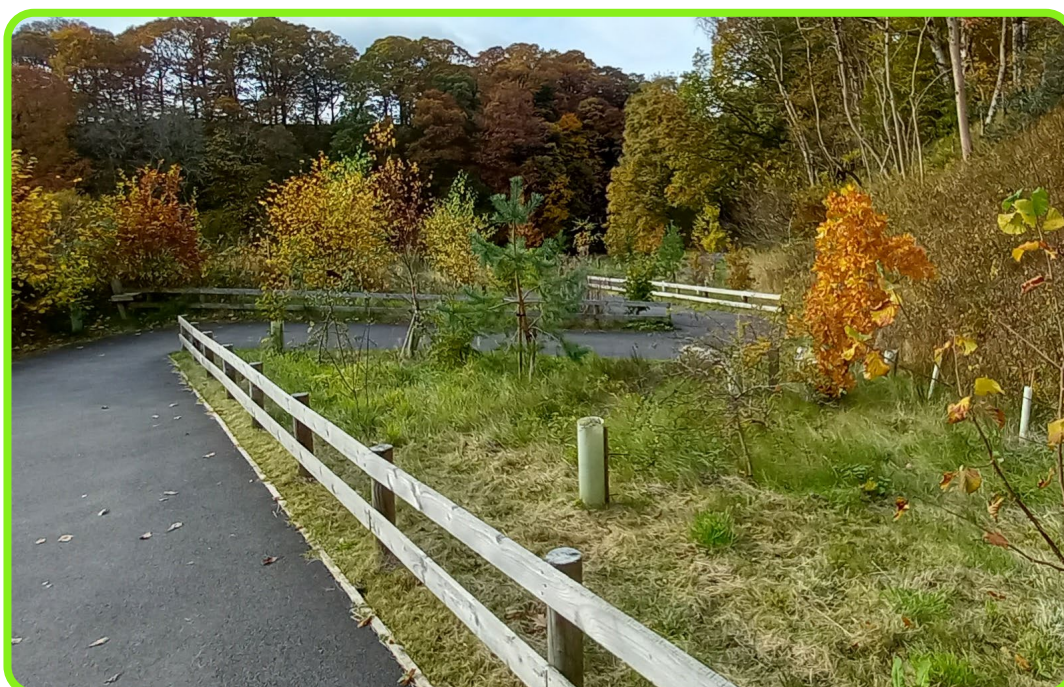
Figure 8-4: Typical arrangement of a canal towpath and verges.



[Detailed guidance on the design of canal towpaths](#) is available from the Canal & River Trust. Because the nature of the canal network varies and is historic, the Canal & River Trust does not set out minimum widths of these features. Each case is taken on its merits, depending on anticipated user volume and local constraints and opportunities.

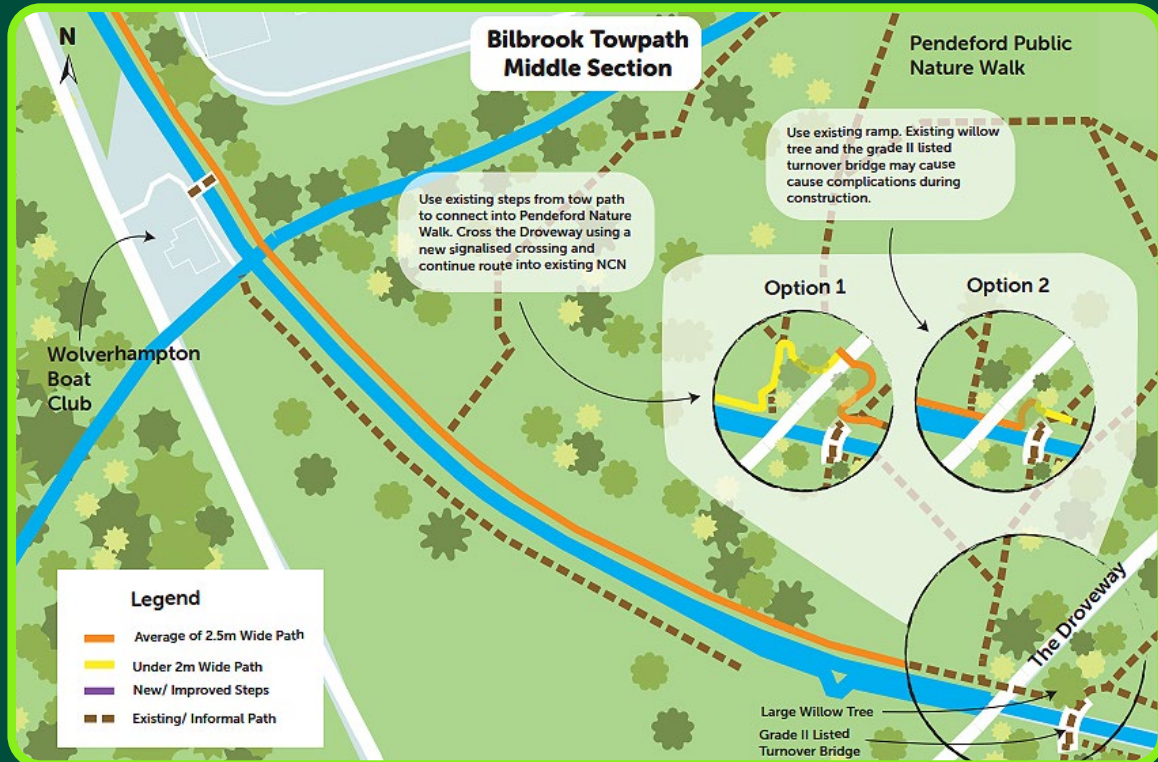
Based on the guidance in Chapter 5, designers should aim to achieve a minimum 2m towpath width. This allows two wheelchair users to pass easily, and individual pedestrians and cyclists to pass one another. No section of surfaced path should be narrower than 1.5m, or 1.2m at pinch points, which is the minimum width required to accommodate a mobility scooter and the cycle design vehicle.

Where this is not possible, the front and back verges may provide additional space to enable cyclists and pedestrians to avoid one another, but this will require these to be broadly level with the path and clear of vegetation.



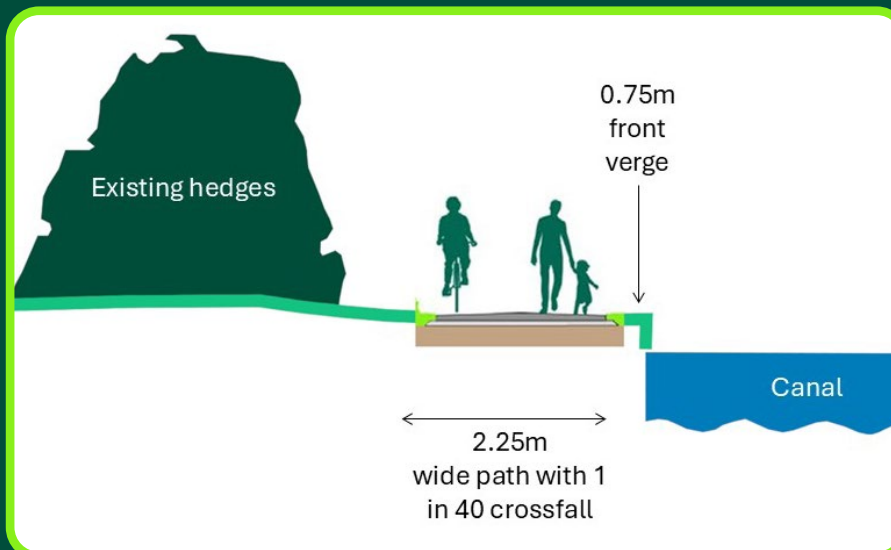
Case study: Towpath improvement scheme, Bilbrook, Staffordshire

Figure 8-5: Overview map of the canal towpath scheme in Bilbrook.



Credit: Walk Wheel Cycle Trust.

Figure 8-6: Cross section diagram of the canal scheme in Bilbrook.



The Shropshire Union Canal towpath in South Staffordshire is also part of Walk Wheel Cycle Trust National Cycling Network route 81. Improvements to the towpath at Bilbrook, near Wolverhampton, were funded by ATE as an exemplar project. The work was led by the Trust and involved the community in the co-design of the scheme. The typical cross-section of the improved towpath includes a 2.25 to 2.5m wide path with a 0.75m wide front verge.

The closeness of these routes to water presents an additional hazard to users, which could increase the seriousness of any collision or fall. Designers need to consider the suitability of available route widths and passing places in the context of the expected level of use of a route.

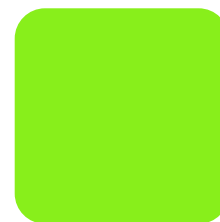
In addition to constrained path widths, canal towpaths may also feature headroom constraints where routes pass under bridges, and appropriate signage may be required.

As stated in LTN 1/20 Chapter 5.3.2, lowering the minimum headroom to 2.2m may be acceptable at existing structures but must be decided on a case by case basis. Factors such as geometry and forward visibility need to be considered.

Canal towpaths typically do not have frequent access points, which can impact on users' sense of personal safety. The lack of opportunities to escape from a route, passive surveillance and overlooking, and limited forward visibility at structures may reduce the attractiveness of these routes, particularly to children, women and girls.

Partner organisations include:

- Canal & River Trust
- local authorities
- landowners



8.9 Major highway schemes

Typical features

Major highway schemes in rural areas, such as bypasses, usually take a well-engineered route through the landscape. This can provide off-carriageway active travel routes that are direct and have gentle gradients.

Guidance on the design of walking, wheeling and cycling infrastructure alongside busy roads is given in Chapter 6, and these requirements should be applied when planning and designing new roads.

Approaches

New and improved highways are usually planned to reduce congestion, improve journey reliability, reduce crashes or enable new developments. Scheme promoters, whether National Highways or the local highway authority, should also include improving networks for walking, wheeling and cycling in the scheme's objectives.

For the Strategic Route Network (SNR), this is made clear in DMRB GG142, which sets out the process for undertaking a walking, cycling and horse-riding assessment and review:

“The aims of carrying out a walking, cycling and horse-riding review are...to identify new opportunities for improvement (or removal of constraints) for users that may arise from the development of the highway scheme...”

Planning and design considerations

When new highways are being planned and designed, careful consideration of walking, wheeling and cycling must be done at an early stage in the process so that sufficient land is available to meet infrastructure requirements.

In particular, the need for separation from motor traffic as set out in Table 4-3 and Chapter 6 (including protection from noise), and the space needed at junctions to provide crossings and facilities, as described in Chapter 10.

Active travel routes can be created alongside the road by increasing the extent of earthworks, and can also be provided at the top or bottom of slopes. However, further earthworks may be needed to achieve acceptable gradients for the route itself.

It will also be important to include space for active travel at new under- or over-bridges along the route, as well as measures to mitigate traffic noise if necessary.

In particular, this should be considered where the new highway will serve existing routes (such as a country lane or right of way). Providing a safe, grade-separated crossing point will enable these routes to continue to be included in active travel and rights of way networks.

Bypasses may free up capacity on the existing highway network, which can then be re-allocated for active travel and other beneficial uses, such as improving biodiversity.

Partner organisations include:

- National Highways
- local authorities

8.10 Rivers, coasts and flood defences

Typical features

Routes alongside waterways and coastal areas can form highly attractive elements of the rural active travel network. These routes may pass along seaside promenades, coastal defences and flood banks. While such routes tend to be level, they may not always be direct if the river or coastline meanders.

Figure 8-7: Tarka Trail, Devon – a shared route along a former railway line beside the River Taw.



Waterways include canals (see towpaths above), river navigations with functional floodplains, fenland drains, fenland rivers, the Broads waterways and tidal rivers. Many waterways have structures of cultural heritage interest, such as buildings and wharves, aqueducts, locks and weir structures, which may add interest to routes. Many waterways have waterside paths that were constructed for towing vessels. However, there are significant stretches of waterway which are fronted by privately owned land without access.

Where routes pass along coastlines, they typically offer limited shelter from the weather or from high seas. This may make these routes less attractive during periods of poor weather.

Routes are likely to incorporate structures such as bridges or boardwalks where routes need to cross watercourses or areas of marsh. Structural elements may also be needed where routes pass across existing or new flood or coastal defences.

Approaches

Consent through an environmental permit is required for works that are:

- on or near a main river
- on or near a flood defence structure
- in a flood plain
- on or near a sea defence

Practitioners should contact the Environment Agency to get advice before applying for a permit.

The floodbanks of artificially constructed rivers in low lying areas provide significant opportunities for waterside paths. In many cases the land occupied by embankments are or were owned by the drainage authority that constructed them. These are typically under separate ownership from adjacent land.

In contrast, navigable drains in low-lying fenland areas are often in private land owned by internal drainage board members. They do not necessarily have publicly accessible paths. There are very few PRow in these areas, reflecting that these were wetlands and difficult to cross before the drainage programmes of the seventeenth century. The crests of embankments along main rivers in these areas also often carry roads with no associated motor traffic-free paths.

The Marine and Coastal Access Act 2009 places a duty on Natural England to secure a route around the whole of England. Coastal Access Rights as defined by the Countryside and Rights of Way Act 2000 (CRoW) allow for most types of open-air recreation on foot or by wheelchair or mobility scooter, but do not normally allow cycling and horse riding.

However, these restrictions can be relaxed with landowner consent, who may also voluntarily provide rights of use by these modes by making a permanent access dedication under section 16 of CRoW.

Where new flood or coastal defences are proposed, it may be necessary to facilitate the movement of construction vehicles or maintenance vehicles. The construction of temporary or permanent access routes may provide an opportunity to deliver new active travel routes.

Planning and design considerations

Routes alongside rivers, coasts and flood defences may be subject to flooding, and in sensitive ecological areas, which should be factored into the design process. These routes may follow existing PRow including coastal paths, but new routes may require access across land within private ownership. Routes may be permissive or have rights.

As with canal towpaths, significant engineering works to form new or improved access points may be required when developing a route, and designers should factor this into the early planning stages. The potential hazards of routes adjacent to water need to be understood.

Partner organisations include:

- Environment Agency
- local lead flood authority
- riparian landowners
- internal drainage boards
- Canal & River Trust

8.11 Disused railways

Typical features

Disused railway lines provide valuable opportunities for conversion into motor traffic-free routes. Many successful routes have been built and more are planned.

Figure 8-8: Monsal Trail along the former Midland Railway line in the Peak District National Park.



Reclaiming disused railway lines makes use of the extensive civil engineering carried out by Victorian engineers, such as viaducts, tunnels, cuttings and embankments. Using the old track bed, with its drainage and a ballast base, provides a cost-effective way to create an active travel route. Railways used gentle gradients and curves, enabling direct, safe and attractive connections between larger settlements in rural areas. They can have significant advantages over the road network in hilly areas, as seen along routes such as the Monsal Trail in the Peak District National Park.

Following disused railways may result in longer journeys than along roads or other path types. This is because of the need to connect to destinations, and the fact that lines may bypass smaller settlements.

In many cases disused railways have become important wildlife corridors, so using them for active travel routes needs ecological mitigation.

Approaches

Some or all of a former railway may be in private ownership, and parts of the route may have been built upon. This requires new linking sections away from the original alignment. Farmers sometimes use sections of old rail alignment as farm accommodation tracks. It may be possible to come to an agreement with a landowner to run a new path outside the old railway to enable this farm use to remain.

Figure 8-9: Shepton Mallet path running on field edge boundary where a farmer has retained the old rail bed for farm use on the left side of the fence.



Where routes have not been built on there is a need to protect them from development through planning policies, if they are to be safeguarded. There are many sections of closed railway that are protected in local plans though still in private ownership, such as the Cuckoo Line between Mayfield and Groombridge.

Planning and design considerations

Structures such as tunnels, bridges and retaining walls may require renovation or replacement if they need repair or have been removed. Significant clearance may be required, and issues around ground condition and contamination may need to be addressed and care taken that they feel safe for all users.

Linear routes such as former railway lines may not have regular access points, which can impact on feelings of personal safety for users, in particular women and girls. As for canal towpaths, this includes the lack of frequent opportunities to escape from a route, among others. Significant engineering works may also be needed to form new or improved access points due to level differences between the routes and the surrounding landscape.

As part of their creation these routes may benefit from formal designation as Public Rights of Way in order to protect public rights in perpetuity and result in the route being shown on Ordnance Survey maps.

Partner organisations include:

- Network Rail/Great British Railways
- local authorities
- landowners
- Heritage Railway Association

8.12 Operational and heritage railways

Introduction

Railways and other fixed public transport provide excellent opportunities for providing new linear routes for walking, wheeling and cycling through the countryside as they have direct alignment and gentle gradients. While noise can be an issue when fast trains pass, railway lines are more pleasant to walk, wheel and cycle near to than major highways. As with new roads, active travel routes can be provided as part of earthworks for cuttings and embankments.

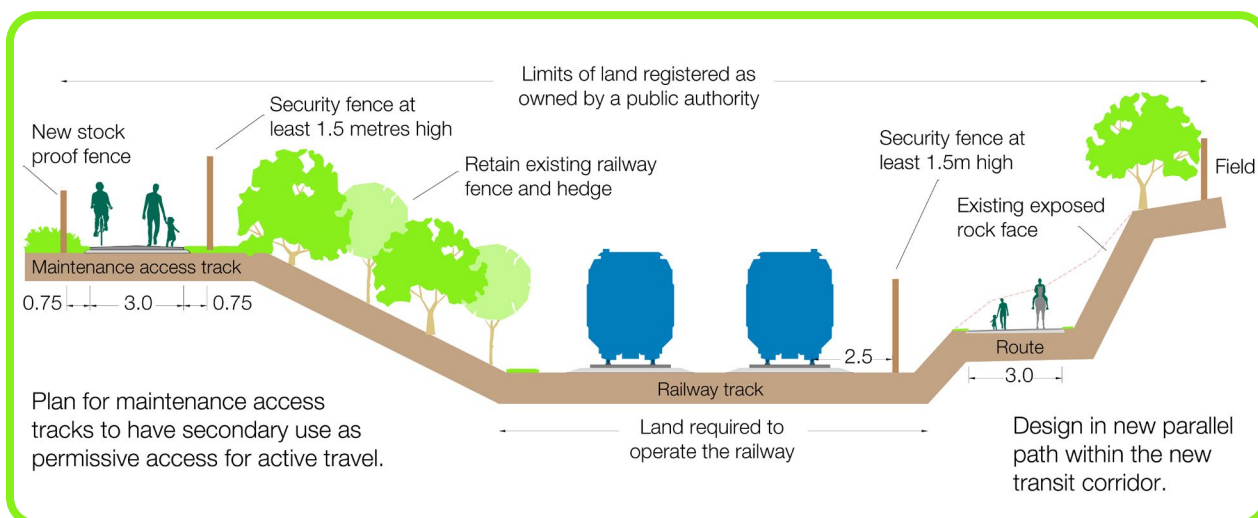
Figure 8-10: Path adjacent to the Bristol to Exeter line as it passes through North Somerset.



There are four categories of routes which could be delivered:

1. On new rail or other fixed public transport corridors such as HS2 or East West Rail, there will be opportunities to create new parallel paths within the new transit corridor. This can be done through specifying dual use of maintenance facilities at the outset. It can also be done by identifying opportunities for new paths to reduce severance caused by the new rail corridor, by providing new links between communities close to the railway.
2. Paths inside the existing railway boundary may be created, usually running along land where there is additional space owned by the railway operator that is used for nature or landscaping, and which often also has tracks or stops to maintain the railway – see Figure 8-11.
3. Similarly, paths inside the railway boundary may be created on land that was once used to operate the railway but is no longer needed. Typically, these will run alongside railways which were once two-track railways, and which are now operated as single-track, resulting in potential space for an active travel path – see Figures 8-11, 8-12 and 8-13.
4. Paths may be built just outside the perimeter fence of the railway land.

Figure 8-11. New path creation within the railway surroundings either as dual-purpose maintenance access track or new parallel path transit corridor.



Case study: The Exe Estuary Trail, Devon

Figure 8-12: Exe Estuary Trail, Devon.

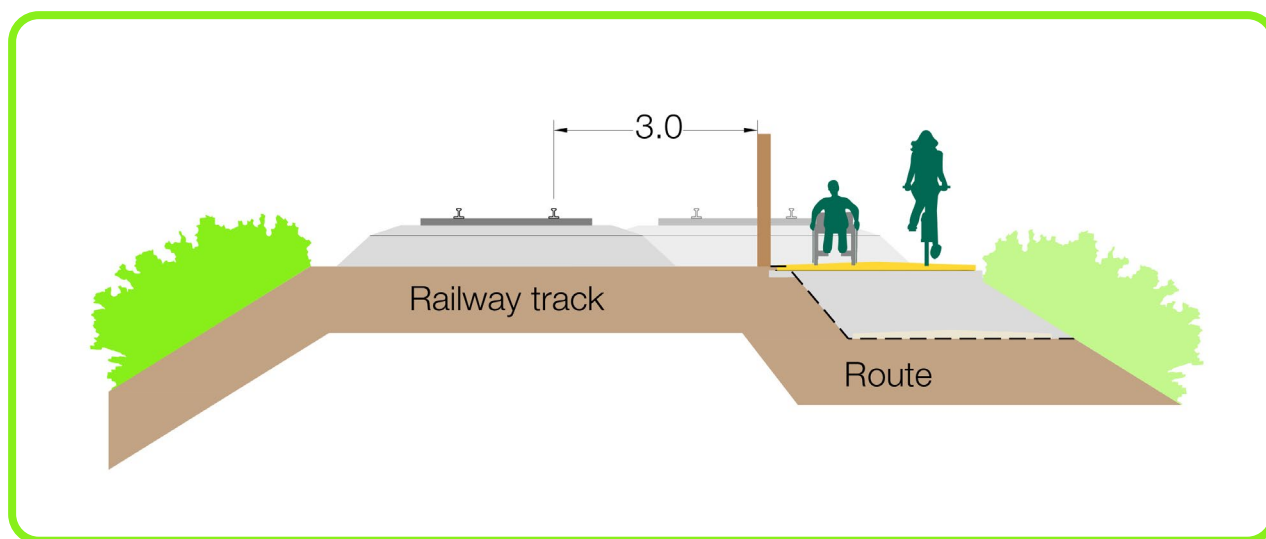


The Exe Estuary Trail is a 16.5-mile active travel route, that forms part of National Cycle Network (NCN) Route 2, and mainly runs parallel to existing railway lines. The largely off-road facility links Exeter city centre to the coastal towns of Exmouth and Dawlish on either side of the Exe estuary.

The design and construction of the route involved overcoming several challenges. These included working in an environmentally sensitive area that is not only a SSSI and Ramsar site, but also meant working with the Environment Agency, Crown Estates, the Ministry of Defence, Network Rail, Royal Society for the Protection of Birds (RSPB) and numerous other landowners.

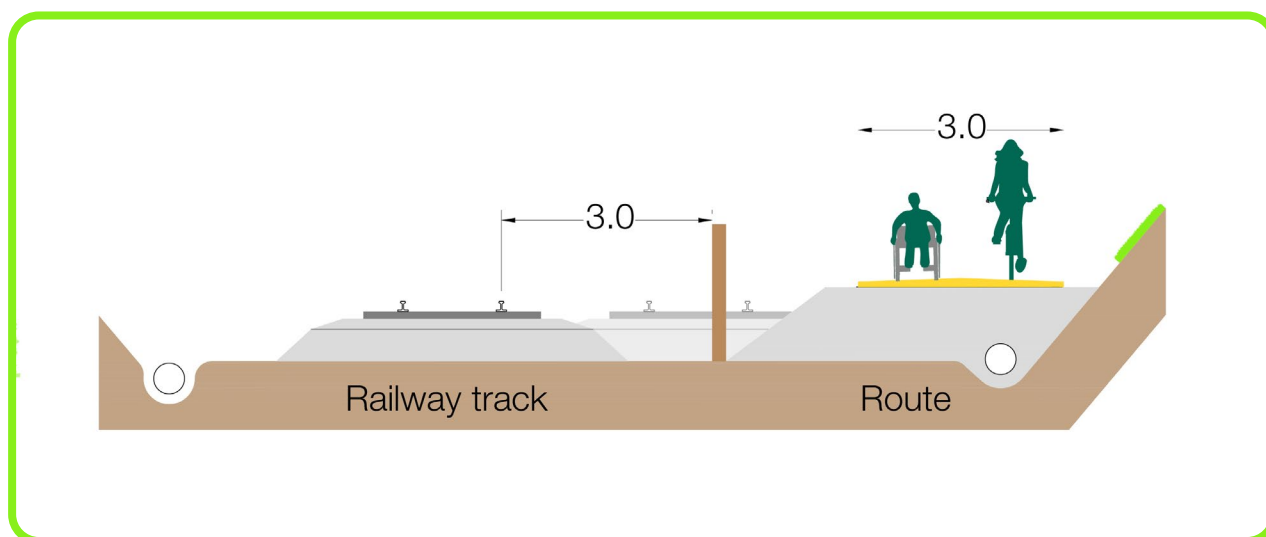
On the east side of the estuary, the Walk Wheel Cycle Trust recognised that in places, there appeared to be surplus Network Rail land alongside the railway. If sections of the trail could be built on this surplus land, it would simplify the project by only needing the agreement of one landowner. The Trust undertook the initial negotiation with Network Rail in advance of Devon developing the detailed designs in accordance with their requirements.

Figure 8-13: Route formation along embankments on two-track railways operating as a single-track railway.



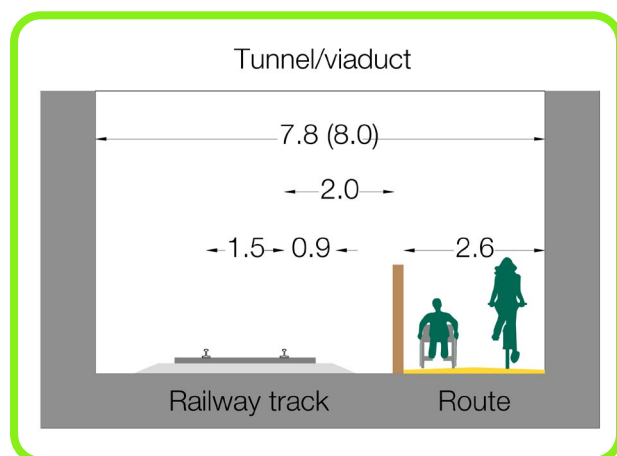
As shown in Figure 8-13, the embankment formation (the compressed earthworks below the ballast) is often around 10m wide. With an offset of 3m there is 3m left for a route to be created. The outside edge can either be protected by fencing or planting. Additional space for routes can be gained by dropping the path, as shown above, moving the route away from the railway fence line. In exceptional circumstances, retaining structures such as gabions could be used along the edge of the lowered route.

Figure 8-14: Route formation through cuttings on two-track railways operating as a single-track railway.



As shown in Figure 8-14, formations through cuttings on two-track railways may be wider due to the presence of drainage ditches. In this situation a ditch will need to be culverted and raised on a low causeway so that sufficient width can be found for a new route.

Figure 8-15: Route formation through tunnels and over viaducts on two-track railways operating as a single-track railway.



Through tunnels and across viaducts, the distance between walls and parapets is usually around 7.8 to 8.0m. With an offset of 2.0m there is space for a 2.6m wide path. Given the presence of vertical elements along each side of the path it may not be possible for two users to comfortably pass one another without stopping, and users should be told to slow down on approach to such pinch points.

Approaches

Early engagement with Network Rail, or the relevant railway operator in the case of heritage lines, is vital when developing proposals for a scheme inside the railway boundary.

Existing PRoW may run alongside operational railways. The approaches set out earlier in this section may apply to secure the enhancement of these routes.

Planning consent may be required to deliver schemes outside the rail boundary, and alongside operational railways.

Planning and design considerations

Where new railway corridors are being designed (for example, HS2, East West Rail and Northern Powerhouse Rail), opportunities to deliver active travel routes along haul routes and permanent maintenance access routes should be explored through studies mapping the optimum sections for the creation of new parallel paths. Further, where bridges are being replaced over or under the new railway, those suitable for additional space proofing need to be identified and proofed so that future opportunities to enhance local active travel networks are retained. It is imperative that this work is done as early as possible in the design process.

Where new or improved stations are proposed, opportunities should be taken for improved active travel routes to the station and over or under the railway, with good quality facilities at the station itself to enable interchange.

Network Rail is likely to have a range of requirements and guidance which will need to be understood and incorporated into any proposals for routes alongside existing railways. This includes offsets from assets and requirements around access for maintenance. Figure 8-13 above sets out some minimum offsets which range from 2m between the closest rail and a fence under structures, to 3m where additional maintenance space is required by the rail operator.

The interaction between any excavation and path foundation construction in areas adjacent to retaining walls and embankments needs to be considered. The management of surface water will also need to be considered, and the design of routes may need to ensure that water drains away from the railway boundary.

Under the High-Speed Rail (London-West Midlands) Act 2017, there are powers to repurpose maintenance facilities and/or retain land permanently acquired for use as public access paths where doing so reduces severance caused by the railway and offers a public benefit. Where there is no significant additional environmental effect, planning permission can be assumed.

There may also be opportunities to repurpose temporary structures such as bridge abutments or temporary construction roads as active travel routes.

Network Rail guidance produced in relation to the London St Pancras High Speed (formerly Channel Tunnel Rail Link, later High Speed 1) corridor identified a need to maintain access to an area between 1m and 5m outside of railway land fence lines.

This is for the purposes of maintenance and access to the railway. While not explicitly set out in the guidance, it is worth exploring whether such areas could have dual functions – delivering active travel routes that also allow for occasional access for maintenance or engineering works along the railway.

In general, where land to maintain the railway is also used for an active travel path, it should be assumed access will be permissive. The rail operator can prioritise railway maintenance over public access. In this case, a licence to use the land rather than the creation of a right of way will be appropriate, and can be set out in an access agreement between the operator and local authority.

Where a new path is constructed or improved adjacent to active railways, there can be a higher risk of trespass or vandalism on the railway. There is likely to be a requirement for mitigation measures to prevent access to the railway, usually through a security fence. The fence specification, for example weldmesh fencing or steel palisade fencing, will depend on the context and will need to be agreed with the rail operator. Some example heights are set out in Table 8-2, and an example shown in Figure 8-16.

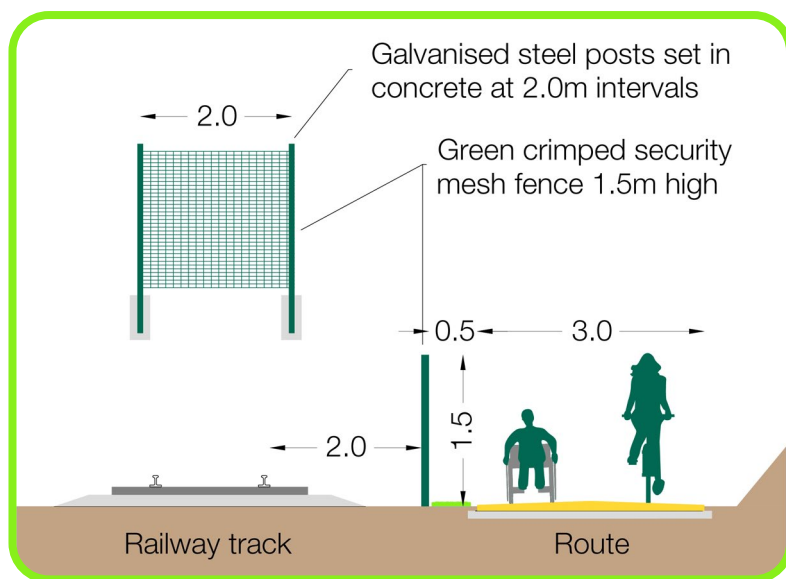
Additional measures such as the planting of dense thorny species or higher, more secure fences may be required where a new active travel route increases the risk of vehicle incursion onto the railway.

The visual impact of such features may need to be considered in sensitive settings, as well as the impact on perceived and actual safety.

Table 8-2: Typical fence height required alongside railways.

Type of railway	Minimum fence height (metres)	Example
HS2	1.8	Rural Buckinghamshire
Conventional	1.4–1.5	Bristol to Exeter
Freight only/heritage	1.2	Bristol and Bath Railway Path

Figure 8-16: Security fence alongside a conventional speed railway.



Crossing railways can be challenging and may need to rely on existing underpasses and overbridges, which may be heritage features that are hard to modify. These are often inaccessible to those who are wheeling or cycling, and may not have desirable dimensions, for example in terms of parapet height.

As all users should have access, significant works may be needed – see Section 4.4. Guidance is given in Section 10.7 on dealing with parapet heights that do not meet desirable standards. As mentioned above, where a new path is constructed or improved there may be requirements to prevent trespass.

A risk assessment and method statement (RAMS) is required for all works undertaken within 10m of the operational railway under the Construction (Design and Management) Regulations (CDM).

Figure 8-17: Festival Way (NCN 33) constructed within a field margin adjacent to the Great Western Railway line.



Routes alongside other fixed public transport routes

Although less common, opportunities also exist to create active travel routes along other forms of fixed public transport infrastructure, such as guided busways – see Figure 8-18.

Figure 8-18: The active travel route along the Cambridge Guided Busway.



Partner organisations include:

- Network Rail, relevant railway operator, or other public transport operators
- local authorities
- landowners

8.13 Woodland and forest paths

Typical features

New or improved routes may be formed on woodland tracks and forest paths. Gradients, access and surface type are key considerations when developing new routes to ensure they are fully inclusive.

Figure 8-19: Woodland Path, Peak District National Park.



Approaches

The Town and Country Planning Act considers the formation, alteration and maintenance of a private way (road or track), for the purposes of forestry, to be permitted development. However, there are exceptions to this in some locations and close to public highways, meaning that planning consent may be required for new tracks.

In planning or modifying routes required for forestry activities, consideration should be given to opportunities to incorporate use for active travel.

Section 23 of the Countryside Act 1968 allows forestry commissioners to provide tourism, recreational or sporting facilities which could be used to provide active travel routes in some situations.

Routes through woodland may include routes which are PRow, in which case guidance set out earlier in this chapter will be relevant.

Planning and design considerations

To reduce the impact on mature trees, construction methods for new and improved routes may need to minimise the need to dig. Tree roots can become problematic, and this should factor into the design and specification of construction and surfacing. As with all routes, ongoing maintenance requirements must be factored into the design choices made during route development.

Route alignments should ensure that routes are not too close to trees and that construction is simple. It is important to note general geometric parameters including path widths, gradients, bends and the need to maintain appropriate levels of visibility along a route.

Designers need to be aware of the potential conflict between forestry activities and users of a route. It may be necessary for routes to be closed to the public from time to time for the purposes of forestry management. Where forestry management activities occur along or close to routes which remain open, risks must be carefully managed.

Partner organisations include:

- The Woodland Trust
- Crown Estate
- Forestry England
- National Trust
- Historic England

8.14 Private estates and public parks

Typical features

Routes through urban and country parks or private estates provide opportunities to enhance the attractiveness of a destination and bring economic benefits to the local area. These are typically places where access is controlled and sometimes limited to certain times of day.

From time to time these locations may accommodate events or activities that impact on access to or movement through an area.

Figure 8-20: Chatsworth House, Derbyshire.



Approaches

Routes through parks and estates may already be PRow and to which the guidance earlier in this section will apply.

Private estates may charge for access to the property. Early stakeholder discussions are crucial to understand any additional cost implications for users or ways for routes to be provided outside of ticketed areas.

The use of some travel modes may conflict with existing bylaws which require changes to be made.

Planning and design considerations

The design of routes through these spaces may need to consider planning constraints such as heritage or landscape designations.

The construction of routes may need to pay particular attention to archaeological or ecological issues.

Partner organisations include:

- local authorities
- Historic England
- National Trust
- landowners

8.15 Other recreational and amenity spaces

There may be opportunities to use other recreational and amenity spaces to develop active travel links, such as golf courses, racecourses and cemeteries.

CRoW access land and common land

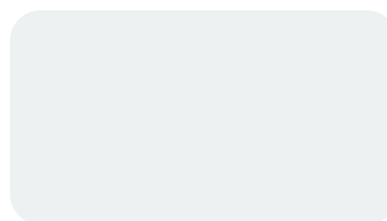
There may also be opportunities to form or improve routes across land benefitting from open access under CRoW.

Under CRoW, the public have rights to walk (or wheel) over mapped access land without having to follow routes or rights of way. Mapped access land comprises open country, such as mountain, moor, heath or down, or registered common land.

Open access provides rights of access for journeys on foot, but CRoW allows for a relaxation of restrictions with the agreement of a landowner, or for a landowner to make a dedication giving permission or rights allowing cycling and/or horse-riding.

This often has the effect of reducing landowner liability whilst still allowing the landowner periodic closures of the route. However, this latter point will need to be borne in mind when considering the resultant functionality of any network including routes that can be closed regularly.

The construction of new or improved routes across common land will require the consent of landowners and may require consent from the Secretary of State, particularly if the route introduces a sealed surface.



8.16 Access controls

General principles

Access controls can reduce the usability of a route by excluding some user groups, including disabled people and those riding non-standard cycles. While the requirements for access controls might vary slightly in rural areas, the same principle applies as set out in LTN 1/20 – it should be standard practice not to use access controls on motor traffic-free routes unless they are absolutely necessary and justified. Access control features that restrict any legitimate users should be removed on existing routes as a matter of course.

Existing access controls that are not accessible to most users should be removed where possible. If access control is still required at a location, the feature should be upgraded or redesigned to be as inclusive as possible. This is essential when an existing route is being improved.

Inclusivity is an essential component of a motor traffic-free route. All legitimate users should have unrestricted access. If access controls are essential, they need to be carefully considered and designed. Early engagement with accessibility groups and other relevant stakeholders (such as local PRow officers, landowners, disability groups, and equestrian groups) is crucial. The principle of least restrictive option, as demonstrated in BS5709 should be upheld. There are very few situations where simple, inclusive access controls may be justifiable, including:

- to control vehicles access (for maintenance/emergencies)
- where there is a need to control the movement of livestock

The PSED requires public authorities to consider how policies and decisions impact people with characteristics protected under the Equality Act 2010. This includes decisions around the planning and delivery of new or improved routes with regards to accessibility and inclusivity, including the impact that access controls may have on all users.

A Walk Wheel Cycle Trust research initiative investigated the effects of changes to a shared-use path in York. It considered the impacts of a scheme involving the removal of 30 restrictive barriers and replacing them to maintain access for all users.

Construction was completed in 2016 and data was collected retrospectively in 2023 to measure levels of active travel, accessibility, and perception of the space. At each of the sites an average of 45 trips were counted on modes such as pushchairs, wheelchairs and cargo bikes that may not have been able to access the routes before barriers were changed.

The study found that for every illegal trip counted, there were 22,212 legitimate trips.

Motorcycle use was not a concern for local residents interviewed as part of the study.

Figure 8-21: Shared-use path barriers in York.



Credit: Walk Wheel Cycle Trust.

Historically, access controls have often been introduced in an attempt to restrict unauthorised access, particularly by powered two-wheelers (including mopeds/scooters, trail/dirt bikes, motorbikes and quad bikes). However, given the similarity between the dimensions of these motor vehicles and the cycle design vehicle (see LTN 1/20 Para 5.4.1), many access controls will also exclude or severely inconvenience legitimate users. This will disproportionately impact people who use mobility aids and non-standard cycles or those travelling with prams or pushchairs.

[Wheels for Wellbeing's Guide to Inaccessible Barriers](#) states that there is little evidence to show that motorcycle barriers reduce anti-social behaviour or illegal bikes.

In order to encourage active travel use and allow the safe passage of non-standard human powered vehicles, access controls should not be used to prevent criminal activities or to address anti-social behaviour. Alternative approaches, such as enforcement, should be considered.

Where anti-social behaviour is persistently problematic and cannot be controlled by policing, evidence of actual incidences should be gathered to inform any decisions. This may include video surveys or reviewing police records.

Barriers that are intended to prevent access with motor vehicles are technically an obstruction on a PRow unless the PRow was created subject to their limitation on use, or unless they are installed by the highway authority under Section 66 or 115 of the Highways Act 1980 for the safety of legitimate users. Authorisation is required for their use on footpaths or bridleways.

Design of access control features

Widths

Reducing clear gaps at access points to a minimum of 1.5m will prevent access by most motor vehicles, while allowing access to all types of cycles and mobility scooters and by horse riders. On a byway (where a TRO is in place to limit use by motor vehicles), a 1.8m gap should be provided to allow use by carriages.

Bollards

This can be achieved simply with the use of bollards, potentially with a single bollard in the centre. On wider routes, multiple bollards may be required, again maintaining the minimum 1.5m air gaps between each bollard (not between centres). The suitability of either arrangement should be assessed case by case.

Figure 8-22: Single bollard arrangement – Flax Bourton, North Somerset.



Where there may be space adjacent to the path which might allow an unauthorised vehicle to bypass any bollard or bollards, features at the path edge need to be considered to block the gap, such as fencing, furniture or planting.

Figure 8-23: Double bollard arrangement – Nailsea, North Somerset.



If occasional access along a route is required by motor vehicles for the purposes of maintenance, emergency access or for agricultural access, lockable, demountable bollards can be used.

Bollards (or any other access control) are themselves a hazard and should not come as a surprise to users. They should contrast with the background and be fitted with retroreflective bands to ensure they are visible at all times of day and in all conditions. Markings may also be used to warn users of bollards in the path.

The use of warning signs is discussed further in Chapter 12, and guidance on the provision and siting of warning signs is included in TSM Chapter 4.

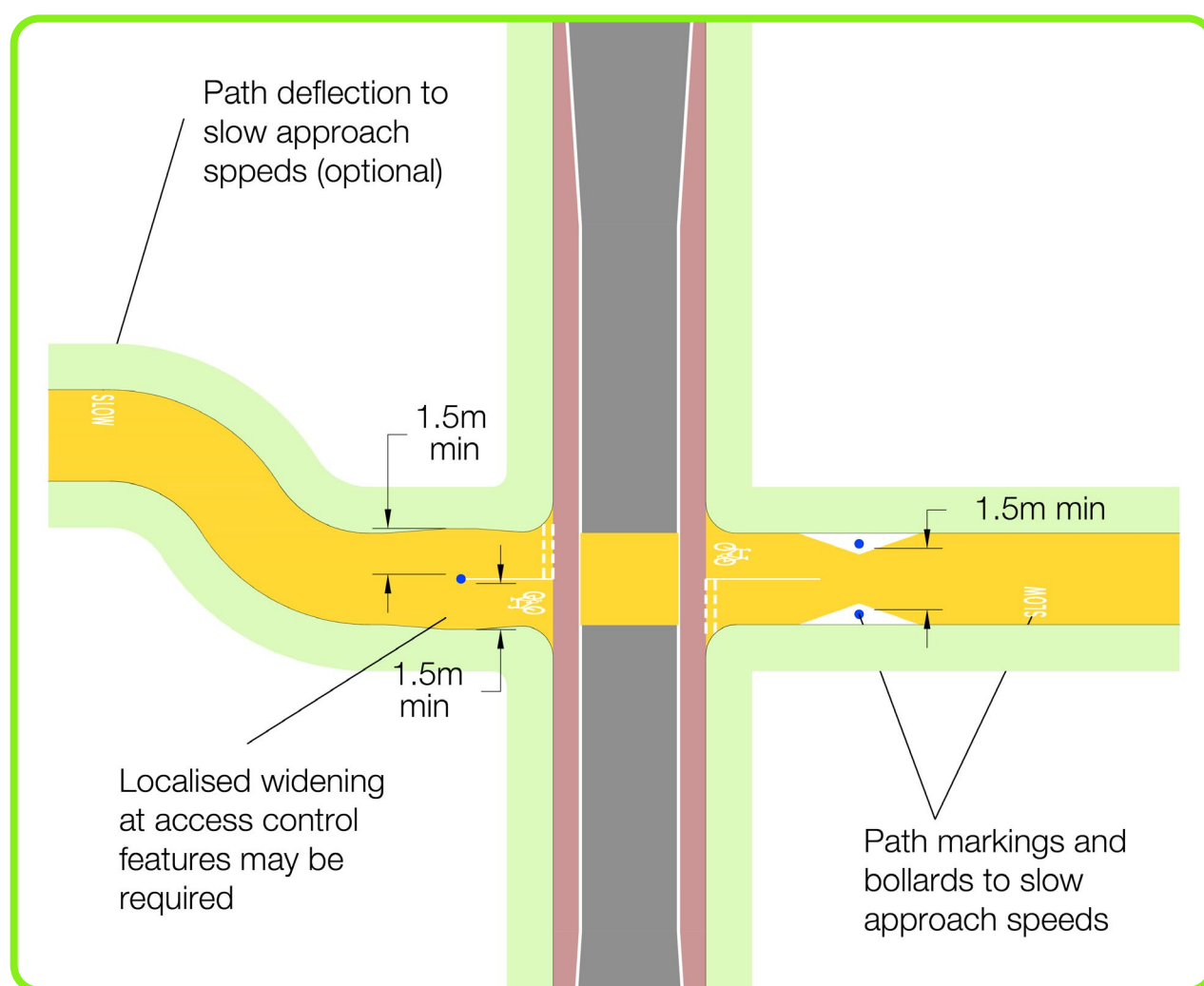
Placement

The placement of any access control feature along a route should allow users to make a straight approach. Where features are proposed near junctions or other areas along a route where users need to turn tightly, they need to be set back so as not to interfere with turning movements, noting that the dynamic envelope of a mobility scooter or design cycle might be greater than 1.5m wide while turning.

Features should also be located so as not to impact on visibility of and for users.

Either side of road crossings, features should also be set back to provide 'launch and landing areas', giving space for users to negotiate access control features separately to undertaking any crossing movement. This should typically be no less than 3m back from the edge of the route or footway.

Figure 8-24: Typical arrangements for access control features.



Gates

Where access control is required on wider routes, including roads and byways where motor vehicles are prohibited, a separate gate may be installed to allow for limited motor vehicle access and to facilitate access for horse-driven carriages.

The gates may be locked depending on access restrictions. Local highway authority consent is needed for installation of gates (or any structures) on a PRow.

Figure 8-25: Gate and bollard arrangement – North Somerset.



Gates that restrict the movement of all users will rarely be appropriate or acceptable on new or improved routes, except in relation to the control of animals. Section 147 of the Highways Act 1980 authorises the erection of stiles, gates or other works on footpaths or bridleways crossing agricultural land, to prevent animals coming on to the land or escaping. Stiles are not recommended along designated active travel routes as they can significantly reduce the accessibility of a route.

If gates are absolutely necessary, they should conform to British Standard 5709 Gaps, Gates and Stiles, and be accessible to as wide a range of users as possible. Gates should be securely fastened open when not required to contain livestock. They should have a minimum clear width of 1.5m (1.53m on bridleways) to allow users of mobility vehicles to navigate bumps in the path. Manoeuvring space is required on both sides of the gate (for mobility scooter riders a minimum of 2.2m square, and a minimum 4m square for horse riders), although more space is desirable. This should include space beyond the latch in line with the gate for the front of mobility scooters (0.8m), and for horses' heads and necks (1.2m). Both latches and handles should be visible and easily operable with one hand from both sides of the gate and be accessible as possible to the widest range of users including seated mobility scooter riders and mounted horse riders where applicable.

The most accessible latched gate is two-way opening and self-closing with a trombone handle, a D-bolt for safety, and a two-way 'easy latch' with dimples or loops which can be lifted with a stick or grabber. Gates hung on H frames are less prone to dropping than those on wooden posts. Adjustable off-set hinges are often more reliable than hydraulic or pneumatic closures and require significantly less maintenance.

Figure 8-26: St Peter's Greenway case study.

The design of the St Peter's Greenway included measures to facilitate the movement of livestock between fields, allowing the tenant farmer to move field gates into a position which temporarily closed the greenway while driving sheep across the route.

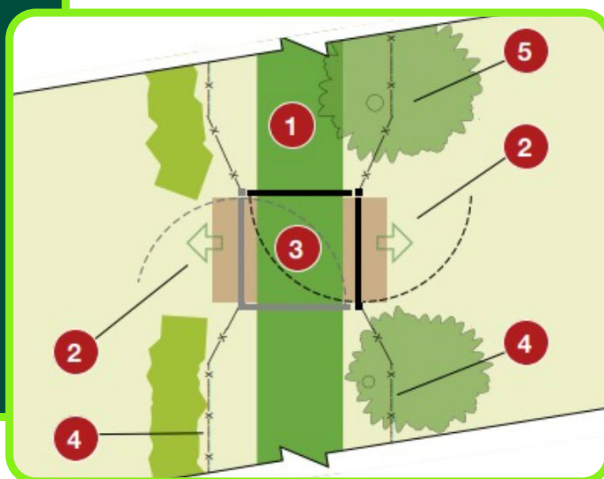


Figure 8-27: Gate with appropriate fittings and sufficient manoeuvring space.

Credit: Disabled Ramblers



Agricultural access

Rural traffic-free routes may need to be used to access agricultural land. Landowners or farmers may need regular access along or across routes to transport materials, vehicles, or livestock. These access requirements, which might vary across a day and across the seasons, will be a key consideration during the design process and should be determined through early stakeholder engagement.

Where access routes cross agricultural land, users of the active travel route should typically have priority. When farm machinery or livestock are being moved across a route, gates can be used to prevent unauthorised access away from the route. Gates can also manage any potential conflict between users of the path and vehicles or animals crossing the route, as per the approach taken on St Peter's Greenway.

Where vehicles are expected to pass along or across a route, the path construction may need to be reinforced, particularly where the crossing vehicle route is unsurfaced either side of a path. A reinforced concrete crossing pad can help prevent damage to the path, as shown in Figure 8-28.

Figure 8-28: Concrete crossing pad and gates.



Cattle grids

Where it is necessary to control the movement of livestock, particularly where they may need to cross a route independently rather than being driven, a cattle grid can be beneficial. Requirements for the installation of cattle grids are set out in section 82 to 90 of the Highways Act 1980.

Provision needs to be made for legitimate users to use an accessible gate to bypass the cattle grids who cannot cross them, either at all or comfortably. These include disabled people (including wheelchair users), horse riders and carriage drivers. Cattle grids cannot legally be installed along the route of a public bridleway or footpath.

It is recommended that there is sufficient space allocated to position both a cattle grid and an accessible gate with substantial manoeuvring space to allow path users of all kinds to operate the latch and pass through the gateway (see British Standard 5709 Gaps, Gates and Stiles).

If there is not sufficient manoeuvring space for the bypass and gate, a cattle grid should not be fitted as highlighted in the Highways Act.

As noted in LTN 1/20, experience in Cambridge showed that a cattle grid with closely spaced (100mm) threaded rod bars can be crossed by cycles without difficulty. Cattle grids with runners may make such features more accessible, although they are unlikely to remove the need to provide an adjacent accessible gated route.

Staggered barriers

As set out in LTN 1/20 and Chapter 5, staggered barriers should not be used to control speeds as they exclude or inconvenience many users, create conflict and are a hazard, particularly after dark. The advised approach to managing speeds is a well-designed route with measures such as deviations to encourage users to slow down, be more mindful and give way to others.

If staggered barriers are considered essential, they should be carefully designed and spaced sufficiently to allow access for all users. These include large mobility scooters, tandems, tricycles, cargo bikes and horse riders. These need to incorporate the minimum gap of 1.5m to the side of any gate, with a stagger length between features along a route of at least 3.5m, with no overlap of features. If vehicle access is required, one or both panels can be installed as gates so they can be unlocked and opened as necessary. Designers should track all movements with the cycle design vehicle and a large mobility scooter.

Figure 8-29: Access control using barriers.

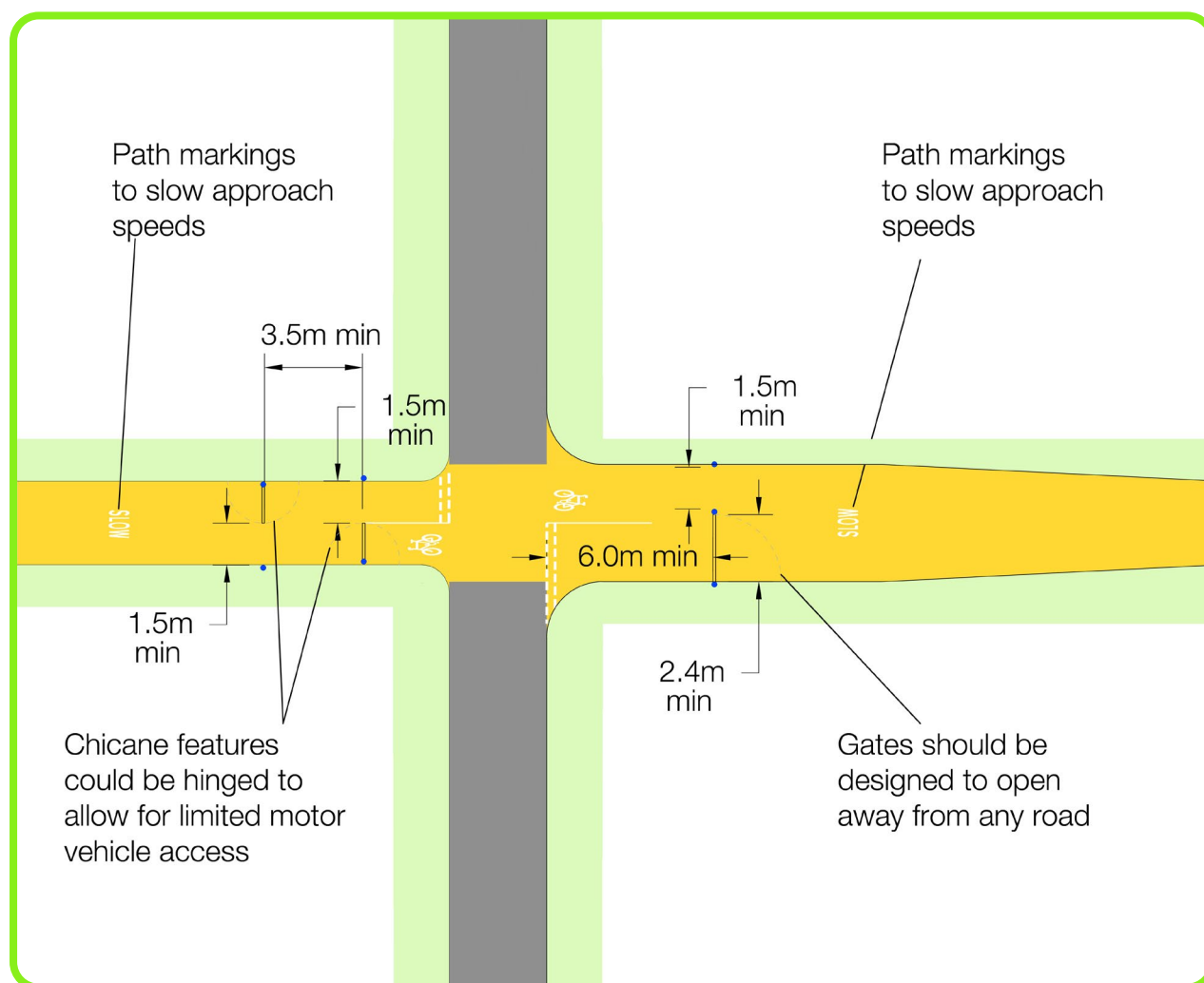


Figure 8-29: Inclusive access controls on the Trans Pennine Trail upgrade, although these would benefit from being set back further from the carriageway edge.



8.17 Nature and biodiversity

Many rural routes attract users who would like to enjoy a peaceful nature setting. Routes should be designed to maximise this.

Routes along rural motor traffic-free routes present opportunities to enhance the environment. This includes delivering environmental protection, supporting nature recovery and including features to enhance ecology and increase biodiversity.

Routes may open up opportunities for natural green and blue corridors to be created or restored, particularly in areas where natural habitats have been depleted through intensive agriculture, industrial or development activities.

Biodiversity

Routes away from the public highway will often require planning consent, which is likely to lead to a requirement to deliver a biodiversity net gain (BNG) of at least 10%. This means a development will result in more or better-quality natural habitat than before. In England, BNG is mandatory under Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the Environment Act 2021).

Saints Trails, Cornwall

Figure 8-28: Section of the Saints Trails.



Ecological considerations were paramount in the design and delivery of the Saints Trails routes in Cornwall, where the delivery of a 10% BNG was required. Cornwall Council worked closely with the Cornwall Wildlife Trust to help manage reserves and enhance the ecological outcomes of the scheme.

The scheme included significant amounts of tree planting to offset tree clearances. However, the timber from the felled trees was used to create seating areas and log piles to improve natural habitats.

Regardless of whether BNG is required, all schemes should seek to avoid impacts on and improve biodiversity. Where areas of biodiversity are lost due to paving and other measures are needed to deliver a good quality route, designers should aim to deliver additional improvements within the project. They may also deliver off-site improvements or purchase credits.

Biodiversity impacts may include areas of land used for construction (access routes/welfare). This should be understood early in the project with plans for mitigation identified and agreed.

At the early stages of route development, advice should be sought from professionals on the likely requirements and the options for meeting these.

If BNG commitments are being incorporated into a scheme as opposed to purchasing off-site credits, commitments have to be delivered and maintained for a period of 30 years. This needs to be factored into the scheme costs and maintenance plan. It is likely that a commuted sum will need to be included in the capital costs to cover this.

Understanding biodiversity constraints and opportunities

Early in scheme development, preliminary ecological appraisals and site surveys are useful to understand the improvements that could be delivered within the scheme. This includes an inventory of existing habitats and species. There may be opportunities through engaging with local wildlife organisations and/or landowners to improve existing habitats in collaboration.

Early surveys can also help understand any constraints that may arise during the development of the route, for example the presence of protected species, invasive species, and valuable habitats.

To incentivise the creation of new routes and green corridors, new Permissive Access Maintenance Payments were made available to landowners from January 2024 as part of the Environmental Land Management scheme. These can subsidise the creation of new permissive routes. Under the new tiered system, further incentives are provided for landowners who offer additional accessibility. This includes increased payments for adherence to a 3m width standard for permitting bridleway and cycle path access. It also includes further payments for supporting access for people with reduced mobility, such as improving path surfacing and the removal of obstacles such as stiles.





9. Transitions

9.1 Chapter summary

Transitions between different types of provision for active travel are essential elements of any active travel network. It is important that points of transition are designed and delivered to protect users from motor vehicles. This helps users move comfortably between different route types. Transitions should offer appropriate definition for all users to recognise the boundaries between the spaces provided for different modes, where separated, and between active travel routes and motor traffic.

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This chapter generally focuses on the provision of transitions between infrastructure types for cyclists as these have the widest variety of infrastructure types and particular geometric requirements. However, where shared use paths are shown in the diagrams, these approaches should work for all active travel user types.

Note that throughout this chapter, example layouts use clearly differentiated colours to highlight the different approaches. This is for illustrative purposes only and is not a recommendation for surface colouring.

9.2 Introduction

Active travel routes can be made up of different types of provision, such as motor traffic-free routes, quiet lanes and streets, and protected space on busier roads and streets. Designers need to consider how users move between them.

The definition of a transition in this guidance is broader than in LTN 1/20.

Transitions include locations where:

- active travel routes join or depart from the carriageway
- a protected route changes between bidirectional and unidirectional provision; and
- provision changes between a shared route and a separated route

Transitions between different types of provision pose different hazards for different users. It is important that good quality transitions are provided to enable safe, seamless journeys and to meet the five core design principles, creating safe and welcoming environments – see Section 4.2.

This chapter includes examples of good practice and offers recommended design details for a range of typical transition types likely to be found on routes in rural areas, expanding on the information in LTN 1/20.



9.3 Design principles

Users should be able to transition between different types of routes without unnecessary deviation, with a flush surface throughout – see Figure 9-1. This will remove potential trip hazards and avoid upstands which can significantly impact upon people wheeling and cycling.

When a route changes from being separated by a kerb to sharing the road with vehicles, people using the route should not need to stop or give way. The risk of conflict should be minimised with traffic coming from behind, for example, by providing a built-out to protect users as they enter the carriageway.

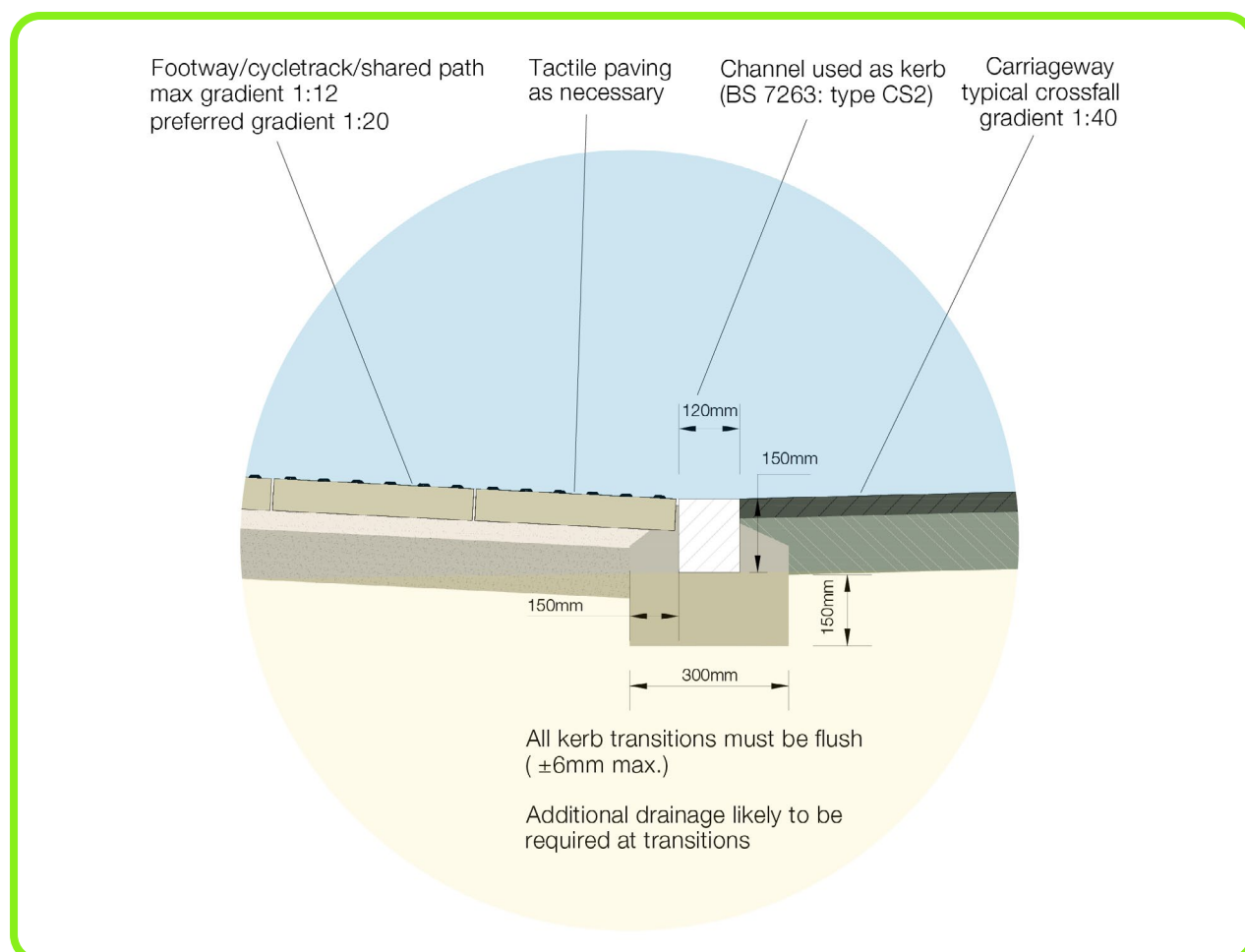
Transitions between different route types need to be clear. Consistent use of materials improves coherence and wayfinding, and gives users confidence to continue along a route.

The use of appropriate tactile paving is a key element in the design of transitions.

Transitions, particularly for those wheeling and cycling, should not include abrupt changes in direction. Where changes in direction are required, appropriate space (including enough space for larger turning circles) should be used to enable users to proceed through a transition point seamlessly.

Upstands between different surfaces, even where small, can present a significant issue for wheelchair users and other small-wheeled mobility aids and devices (mobility scooters, pushchairs, prams, and scooters).

Figure 9-1: Typical construction detail for a flush kerb at a crossing point.



Upstands can be problematic for cyclists, particularly where a transition requires a cyclist to move laterally across a kerb.

Flush transitions are therefore a fundamental requirement for all the arrangements presented in this chapter, even where it is not explicitly stated. This aligns with Inclusive Mobility, where a 6mm maximum upstand is allowed for drainage reasons.

9.4 Transitions between motor traffic-free routes and mixed traffic routes

The point of intersection between a traffic-free route and a route where users continue in a mixed traffic environment, for example, a quiet country lane or street, could be considered as both a junction and a transition point.

In each of the example arrangements in this chapter it is assumed that the volume of traffic and vehicle speeds are suitable for those users expected to continue along the mixed traffic route.

Users must have enough visibility between the point of transition and motor vehicles travelling along the mixed-traffic route. Where the highway corridor is sufficiently wide, or adjacent land can be made available, this could be achieved through the management of existing verges and hedgerows. This potentially includes the translocation or replacement of a section of hedgerow or movable features which might obscure a visibility splay.

Where the highway corridor is narrower, it may be necessary to narrow the carriageway to improve visibility along a route, by introducing buildouts at the end of the traffic-free path. Subject to the volume of traffic on the carriageway and the width of the retained lane, it may be necessary to introduce a formal priority working arrangement. Due to the low-traffic nature of mixed traffic country lanes or streets this may not be necessary.

In significantly constrained situations, it may be necessary to accept a relaxation in the visibility splays for users (see Section 10.5). This should not result in a reduction of the distance but could include the measurement of visibility to a point away from the nearside kerbs (1m to 1.5m offset). This should still allow users to see all vehicles including motorcycles approaching the crossing.

Users also require good visibility, or awareness of these transition points before they reach the intersection between routes.

In rural contexts, the use of surface dressings in contrasting but appropriate colours can be a subtle signal of the end of a traffic-free path to users. This will increase awareness of the transition point for motor vehicles and users within the highway.

Appropriate signage should be introduced both on the highway and the traffic-free route, but this should be kept to the minimum necessary.

Figure 9-2: Typical transition between a traffic-free route and a mixed traffic lane – suitable for narrow rural lanes (greater than 5m) with verges.

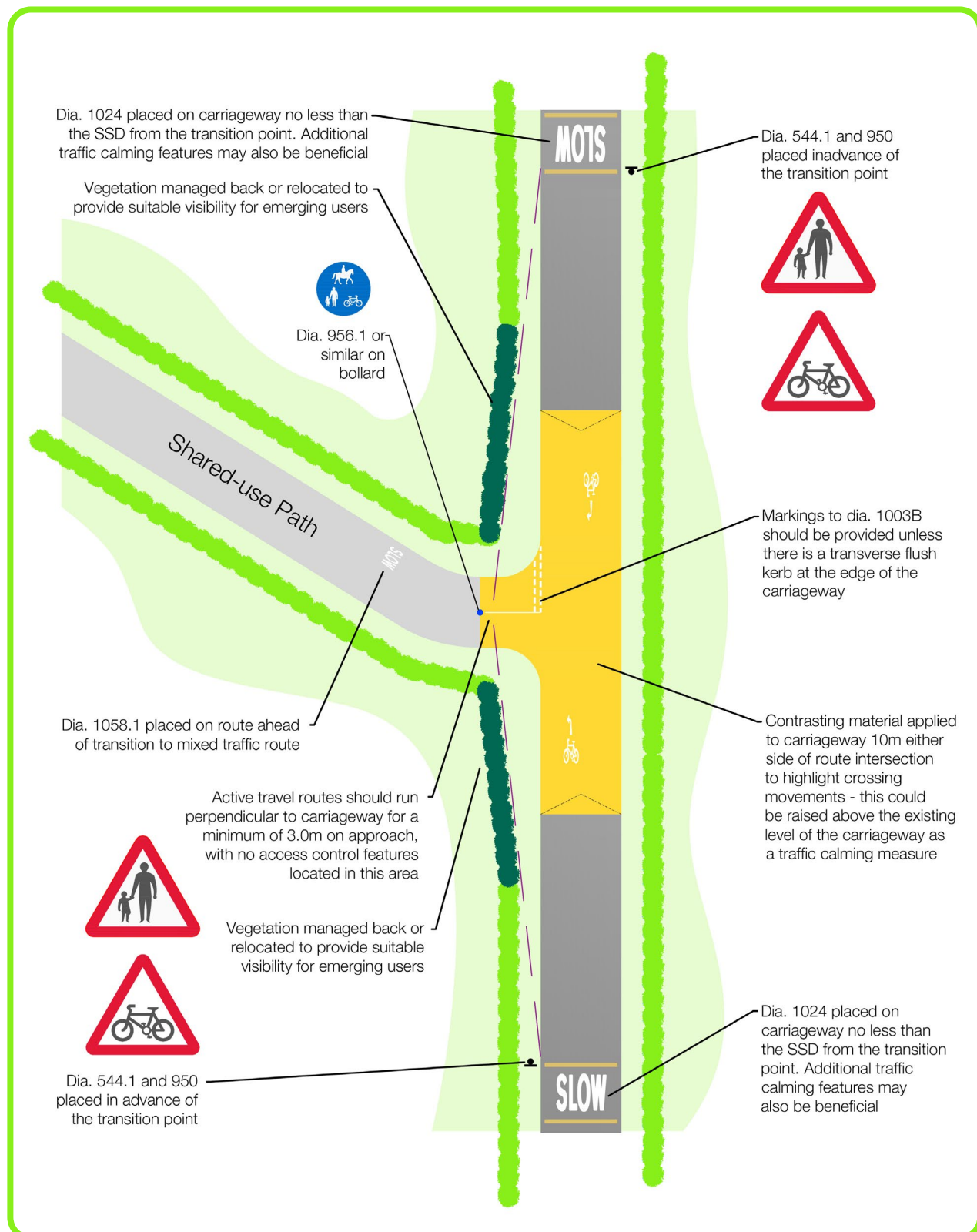
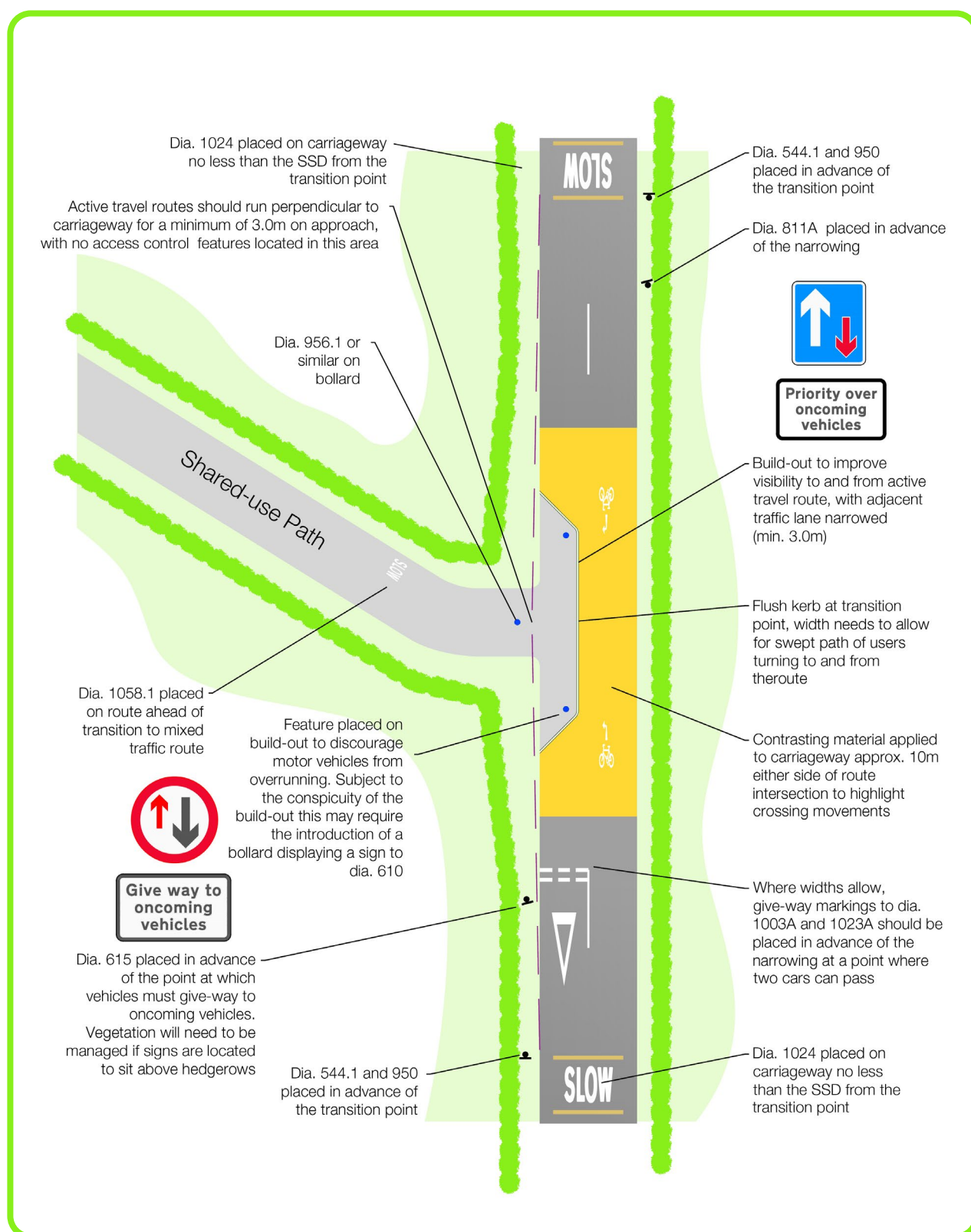


Figure 9-3: Typical transition between a traffic-free route and a mixed traffic lane – suitable for narrow rural lanes (greater than 5m) without verges.



9.5 Transitions between motor traffic-free routes and other PRow

At intersections between routes and PRow, including PRow which are not suitable for all route users, it is important that route users and users of the PRow are aware of the intersection and have sufficient visibility between one another to avoid conflict between users.

Tactile paving, to the recommended colours and layouts shown in the Guidance on the Use of Tactile Paving, should signal a change in a route where a public footpath (or other route only permitting walking and wheeling) meets a route permitting cycling. This should typically be laid across the PRow at the edge of the route.

Where access control is required close to the start of the PRow, sufficient space should be provided between a route edge and any gateway or stile along a PRow. This will mean that users are able to move off the main route before negotiating the path feature and will mean that users do not step across a stile or through a gate directly into the path of users passing along a route. Ideally, gateways should be no less than 3m from the edge of a route and stiles no less than 1m from the edge of a route.

9.6 Transitions between footway and implied footway

At the start and end of implied footways, it is important to consider how users move between a kerbed footway and the implied footway.

As with all other transitions, a flush surface is needed throughout the transition. Corduroy tactile paving should be provided to signal the change between a protected space and a mixed traffic space.

Where bollards or wands are used along the edge of the implied footway, these should be located at least 3m away from the point of transition to avoid obstructing the path of wheelchair or mobility scooters.

Transitions can be perpendicular to or parallel with the adjacent carriageway. Parallel transitions are likely to provide the most seamless connections, with users typically pausing to consider vehicle movements at perpendicular transitions.

The point of transition should be protected from parking, both on and near the start of an implied footway.

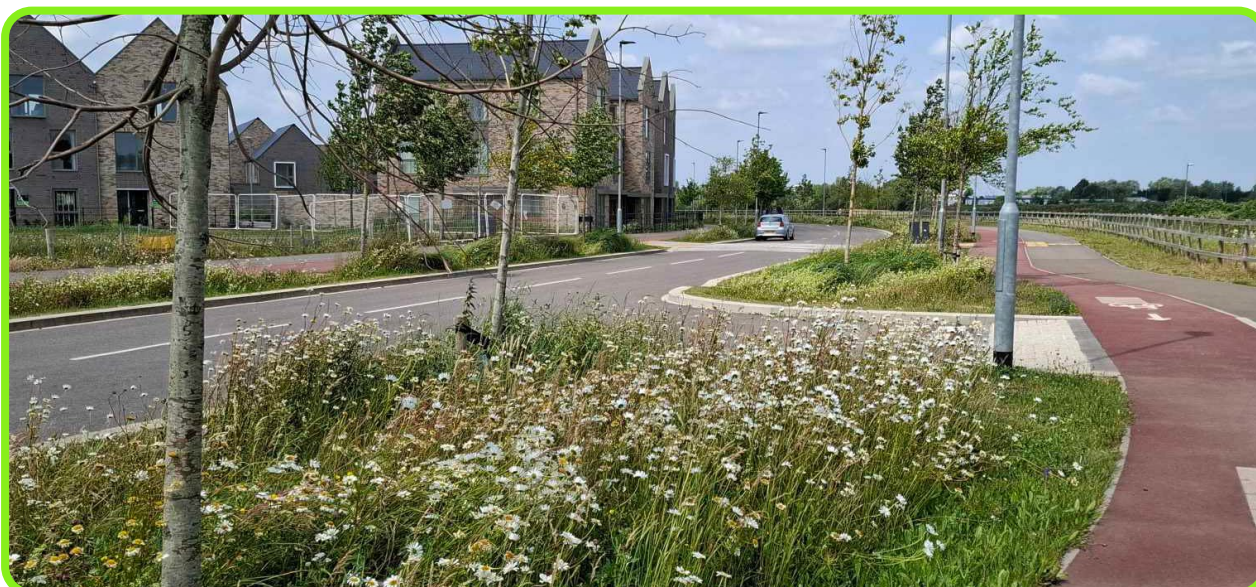


Figure 9-4: Protected perpendicular transition between footway and implied footway.

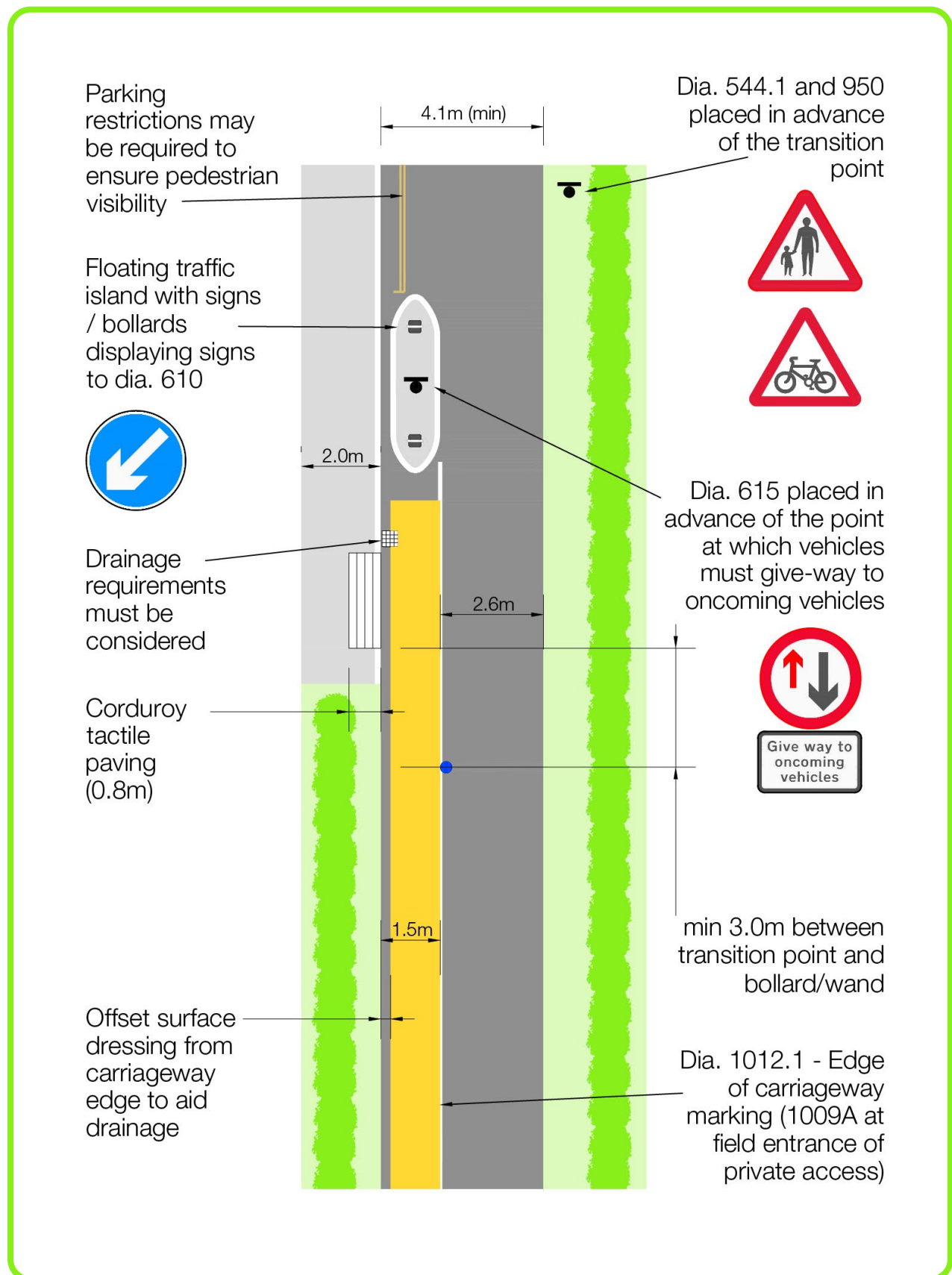


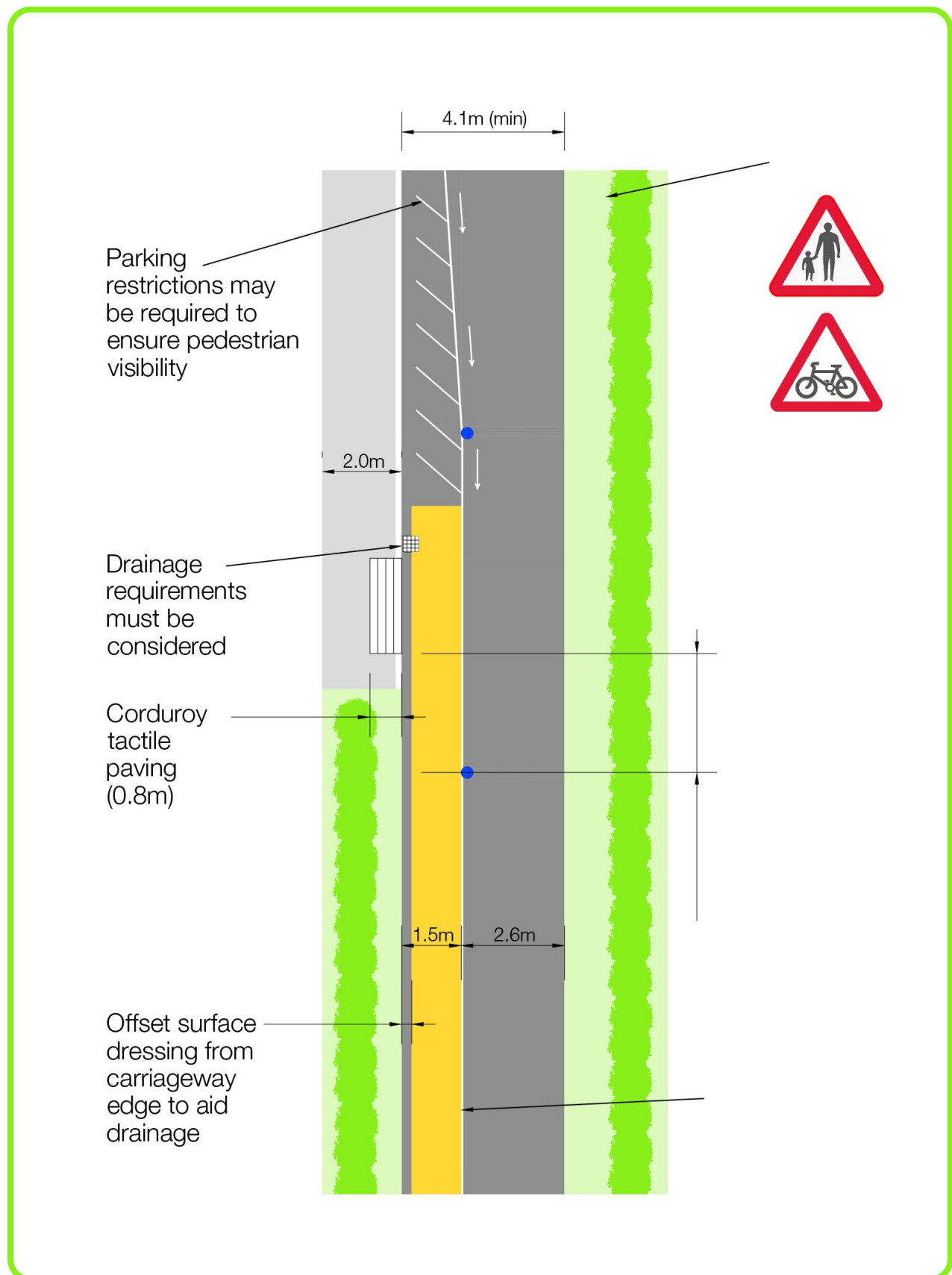
Figure 9-5: Perpendicular transition between footway and implied footway.

Figure 9-6: Linear transition between footway and implied footway with kerb buildout.

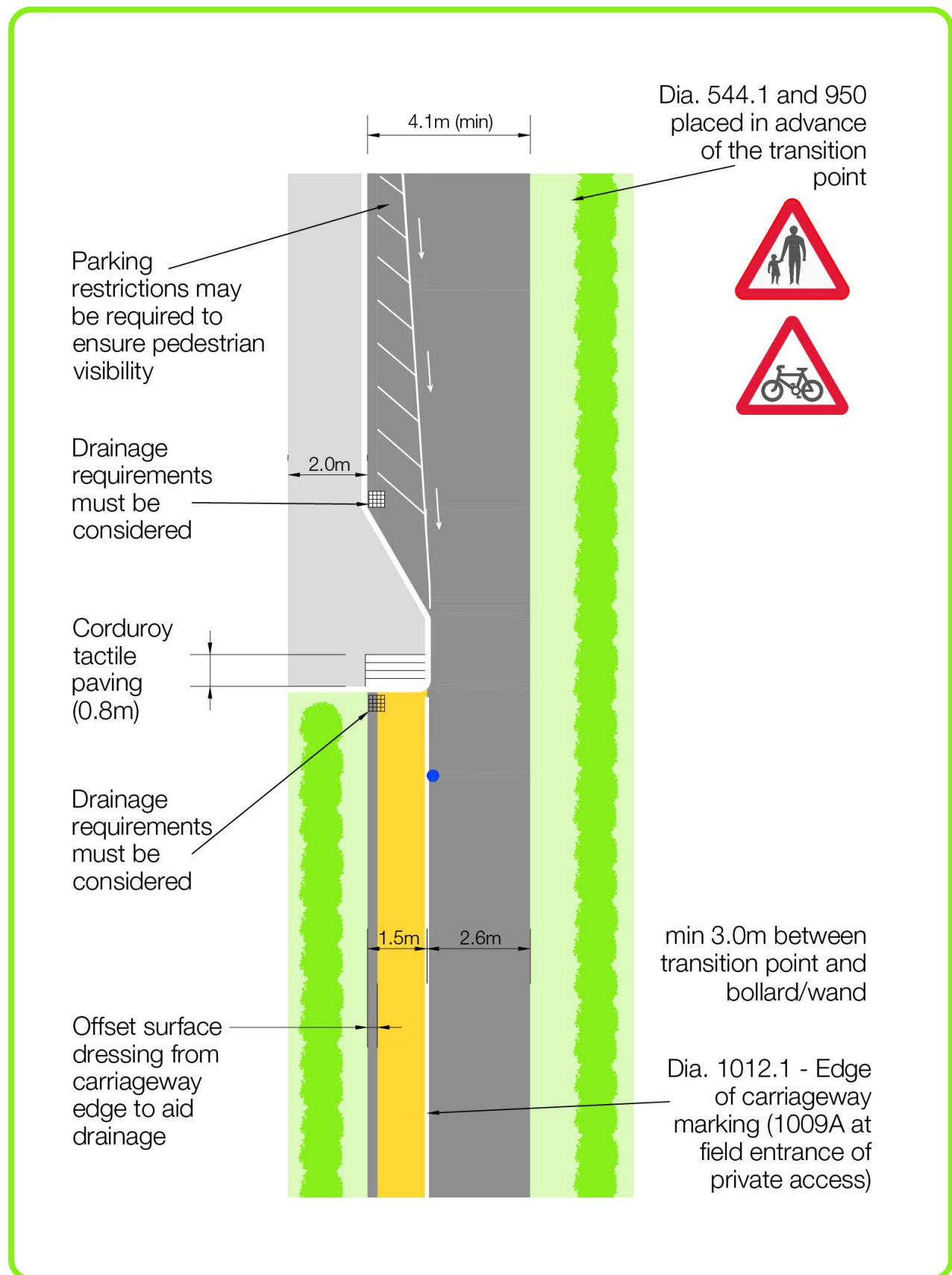
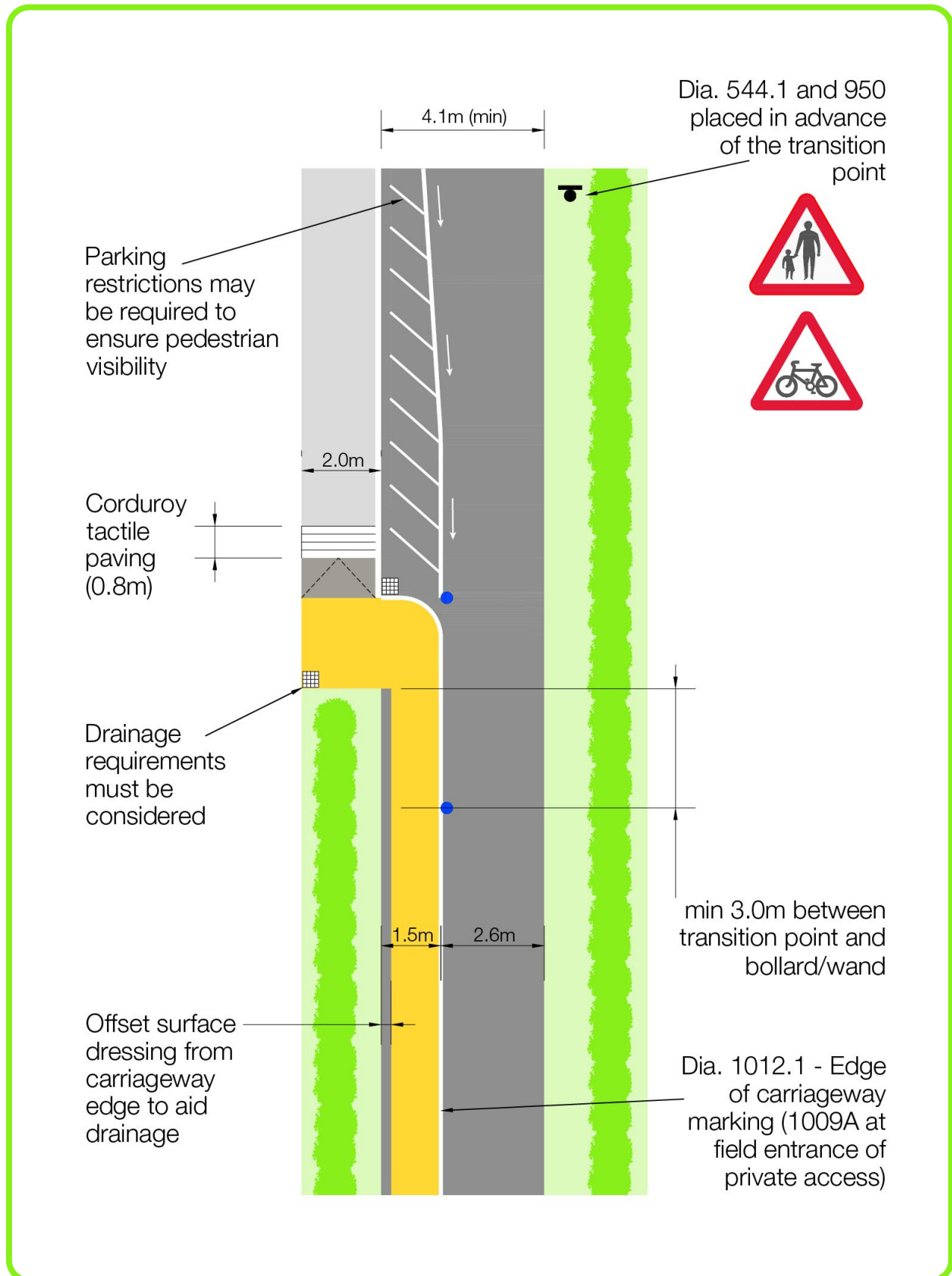


Figure 9-7: Linear transition between footway and implied footway.



9.7 Transitions between shared use paths and segregated routes

Figures 9-8 and 9-9 show the recommended layout of transitions between separated and shared off-carriageway provision, which may be driven by changes in space constraints, the number of path users or context.

Figure 9-8: Bidirectional protected cycle route to shared use.

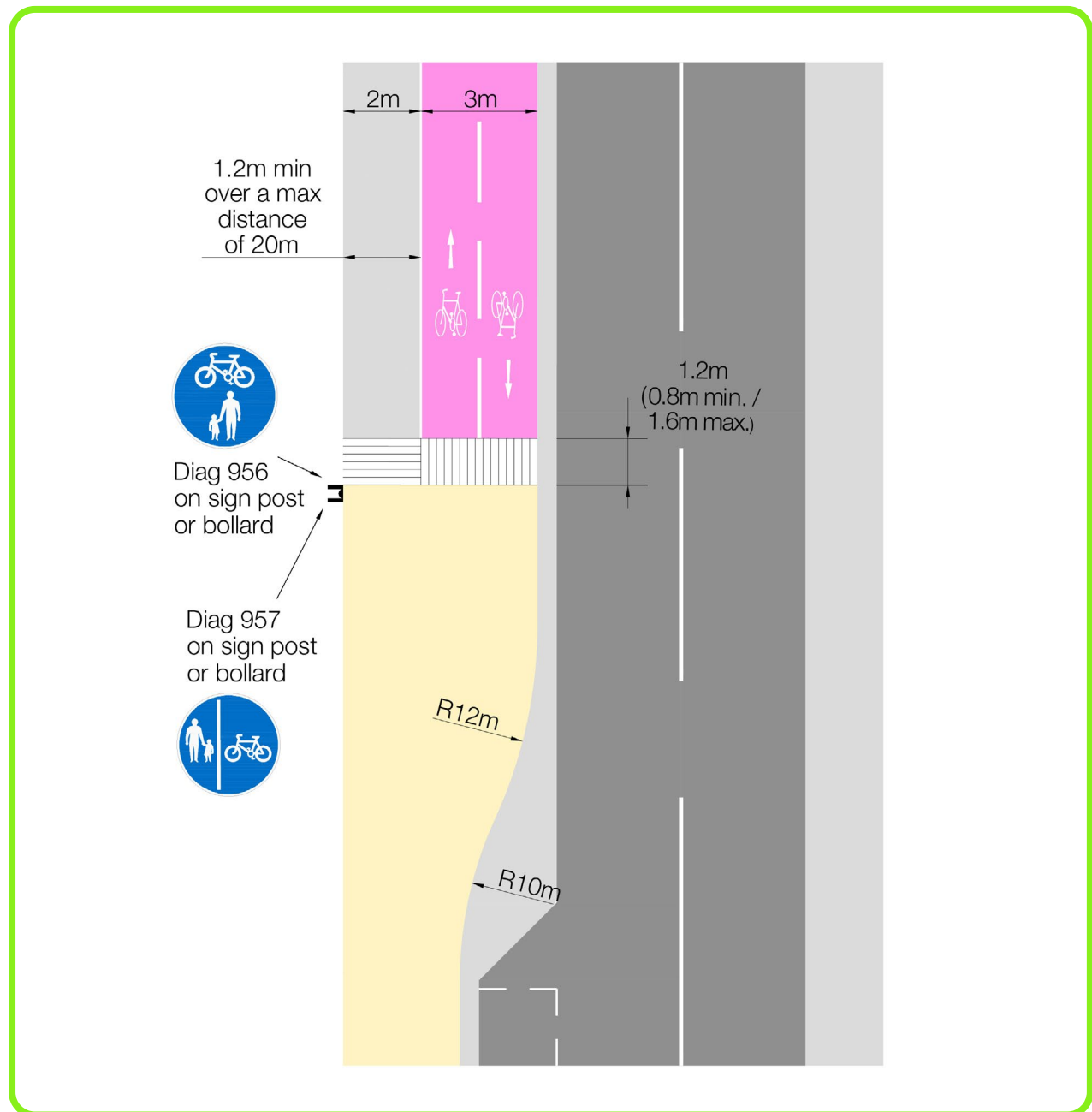
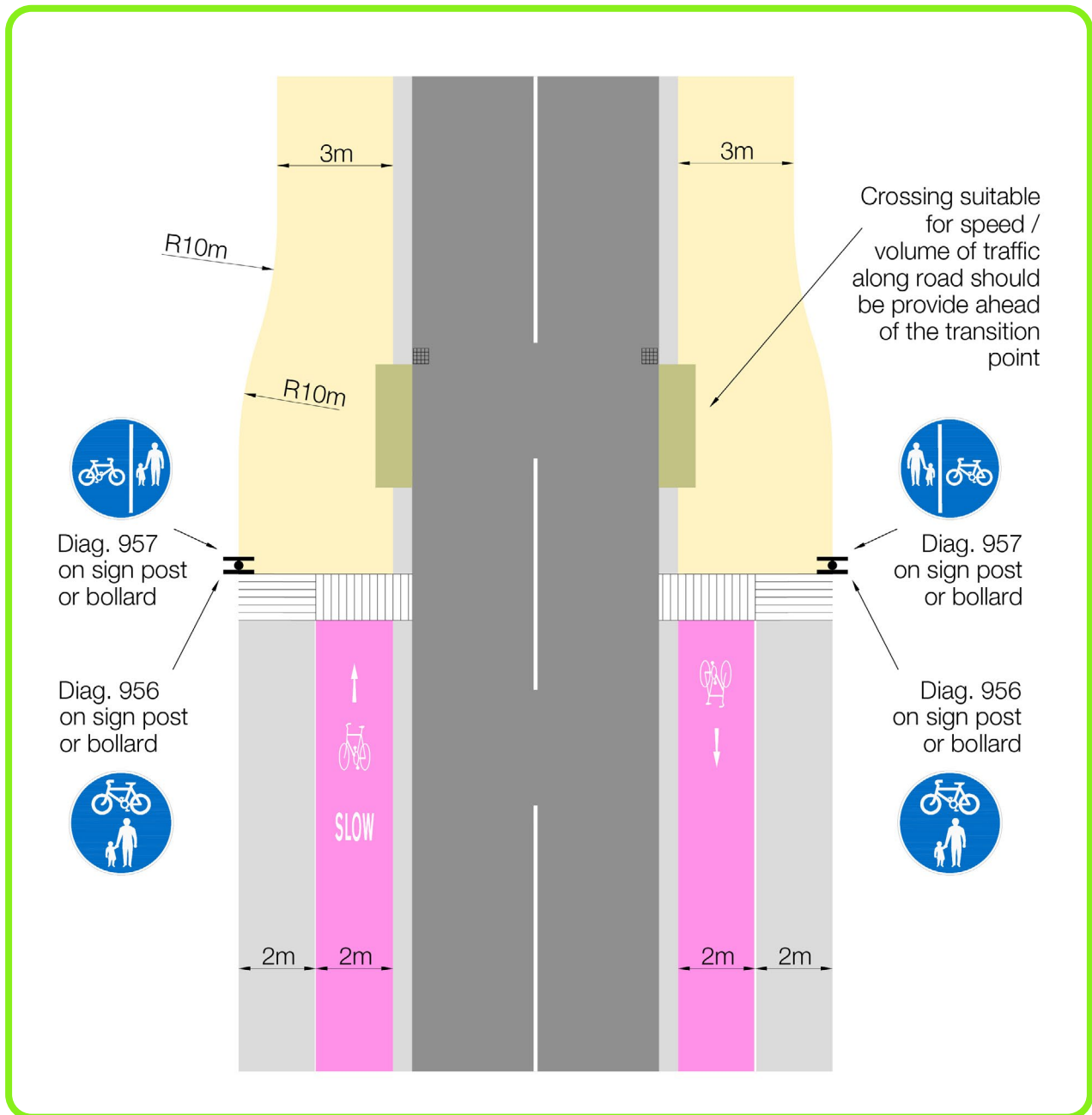


Figure 9-9: Unidirectional protected cycle route to shared use.

9.8 Transitions between cycle tracks and carriageways

Transitions should be designed to allow cyclists to leave or join the carriageway while maintaining their speed and without unnecessary deviation.

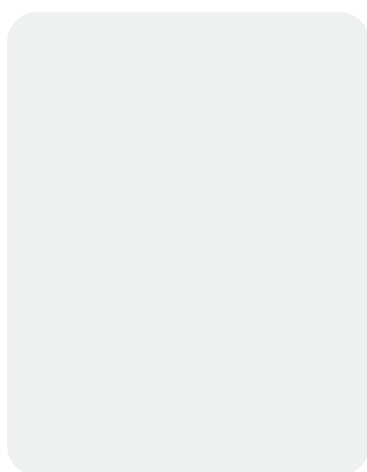
Transitions when joining the carriageway should provide sufficient protection from vehicles approaching from behind and ensure that on-carriageway provision brings cyclists to an appropriate position within the carriageway in any mixed traffic situation.

At the point of transition between on-carriageway and off-carriageway provision, care must be taken to ensure that adequate protection is in place to prevent vehicle parking within the carriageway immediately at the start or end of any facility. Where this is likely to occur, it may be necessary to introduce light segregation for a short distance which allows a user to navigate past any obstruction of the cycle lane.

Where a route requires a change of direction, such as on the approach to crossings (jug handles), these must meet the recommended minimum radii – see LTN 1/20.

The diagrams presented over the next few pages show changes in surface materials between on- and off-carriageway facilities to highlight the point of transition. Where possible, coloured surface dressings should be applied to both on- and off-carriageway routes to increase legibility and aid wayfinding.

The following pages set out a series of typical arrangements allowing cycles to transition comfortably and safely between on- and off-carriageway provision, as well as the arrangements for transitions between bidirectional and unidirectional protected cycle routes, which require a road crossing. It should be noted that while the principles shown remain the same at both junctions and controlled crossings, the diagrams show junctions.



9.9 Transitions between shared paths and on-carriageway provision

Figure 9-10: Transition from mixed traffic conditions to a shared-use route at a junction.

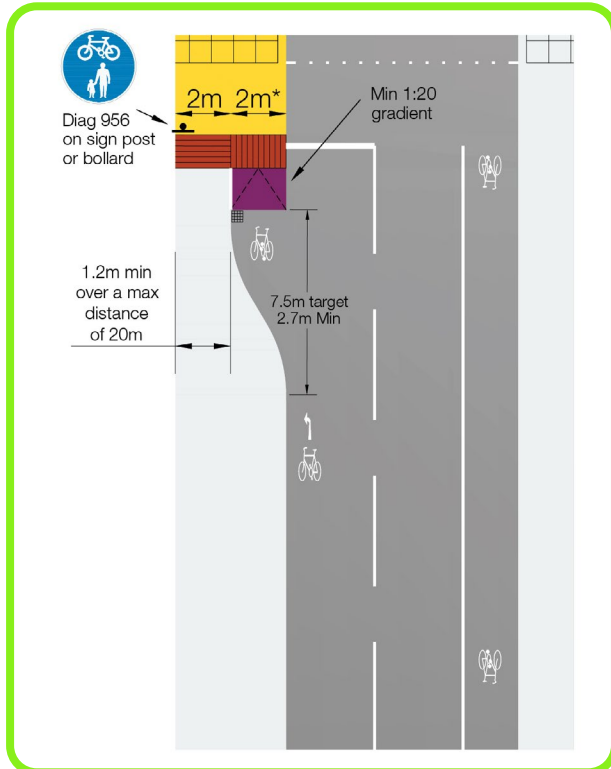


Figure 9-11: Transition from a shared-use route to unidirectional on-carriageway cycle lane.

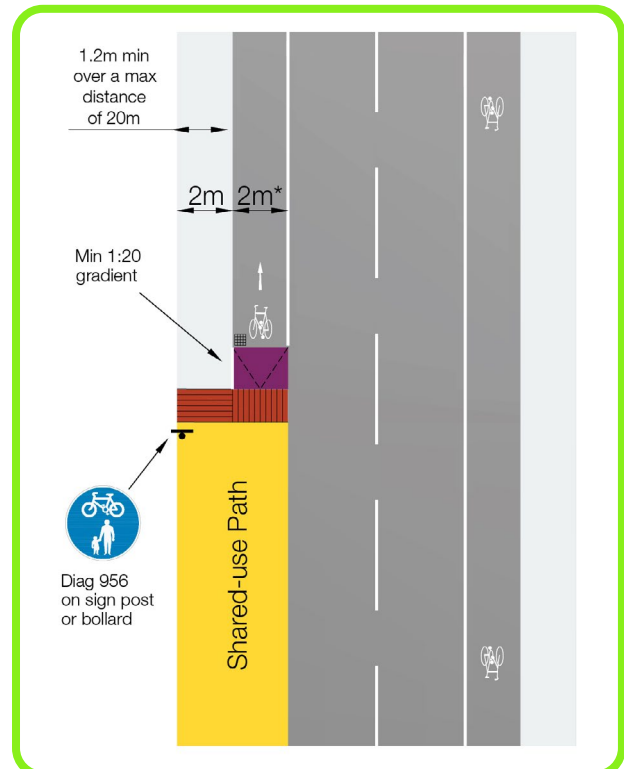


Figure 9-12: Transition from mixed traffic conditions to a shared-use route at a junction.

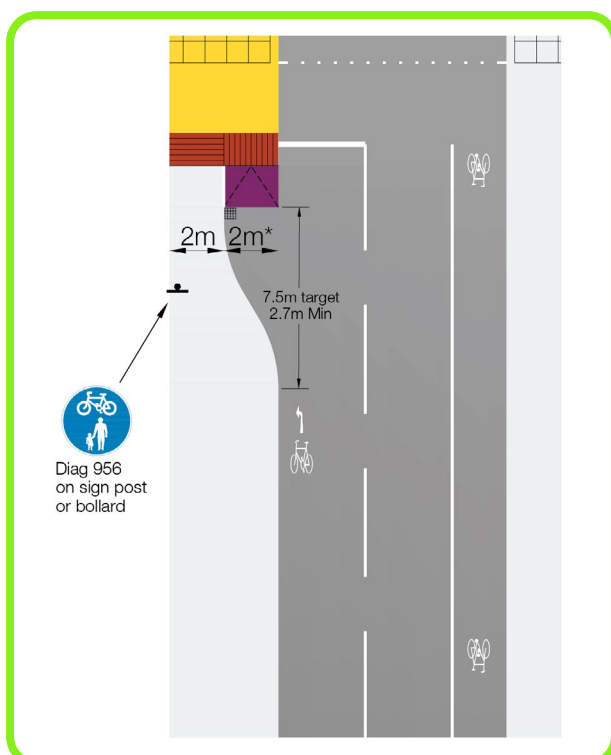
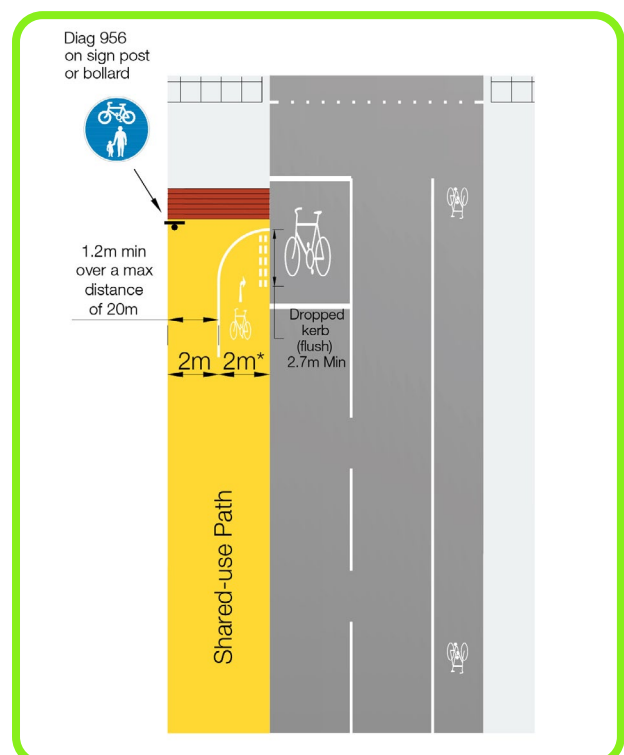


Figure 9-13: Transition from a shared-use route to mixed-traffic conditions at a traffic signal-controlled stop line at a junction.



9.10 Linear transitions between protected unidirectional cycle tracks and on-carriageway provision

Figure 9-14: Transitions between protected unidirectional cycle route and on-carriageway cycle lanes.

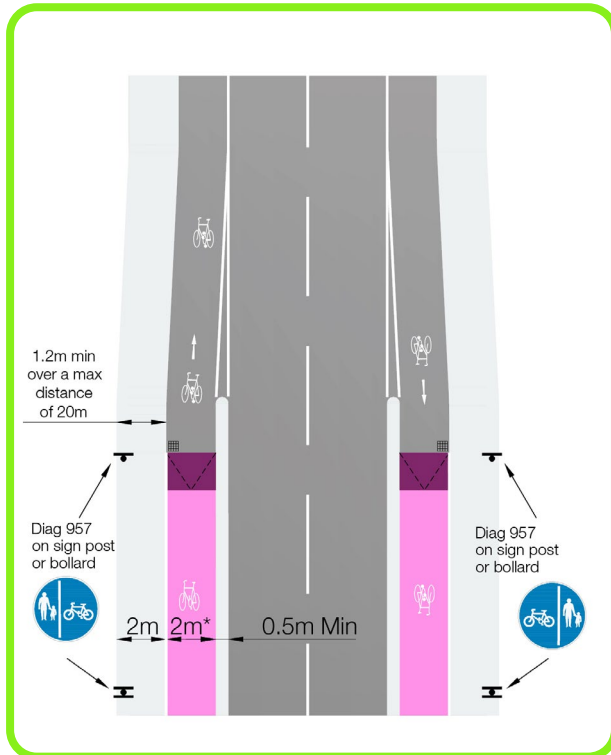


Figure 9-15: Transitions between stepped unidirectional cycle route and on-carriageway cycle lanes.

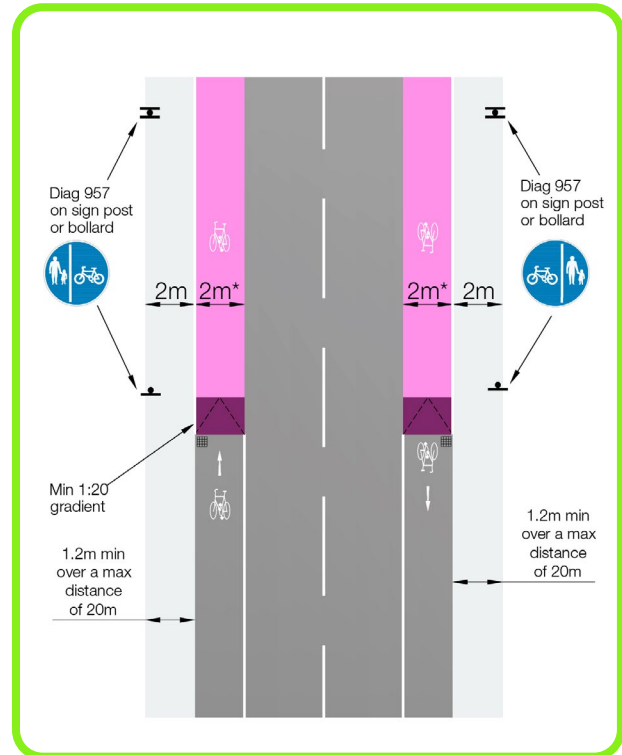


Figure 9-16: Transition between on-carriageway unidirectional cycle lane and protected unidirectional cycle track to accommodate kerbside activity.

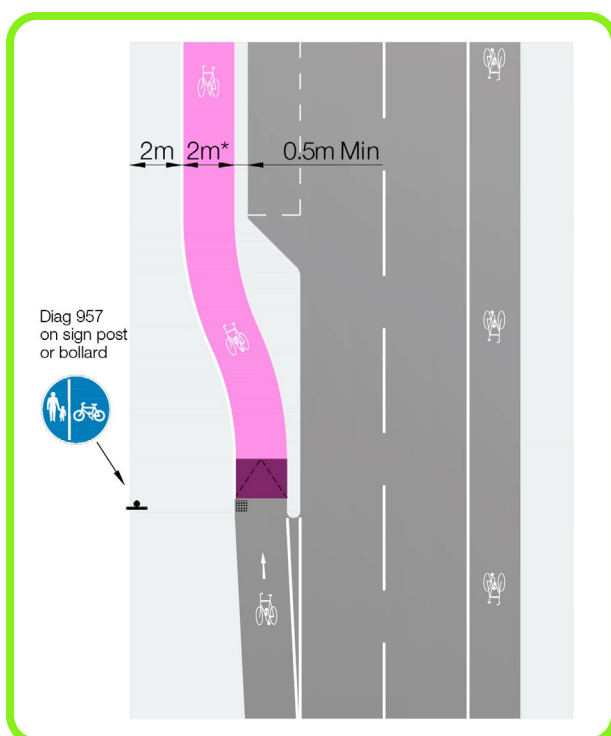


Figure 9-17: Alternative transition between on-carriageway unidirectional cycle lane and protected unidirectional cycle track to accommodate kerbside activity.

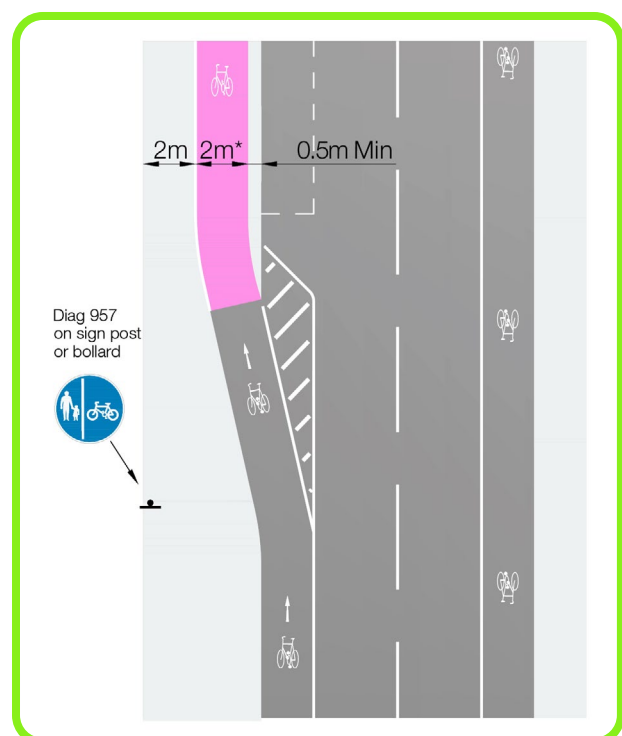


Figure 9-18: Transition between on-carriageway unidirectional cycle lane and protected unidirectional cycle track to accommodate kerbside activity.

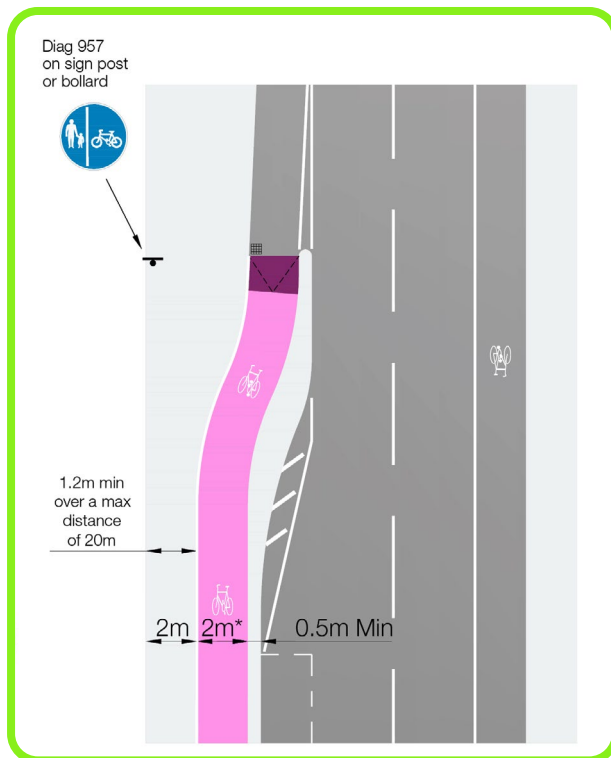
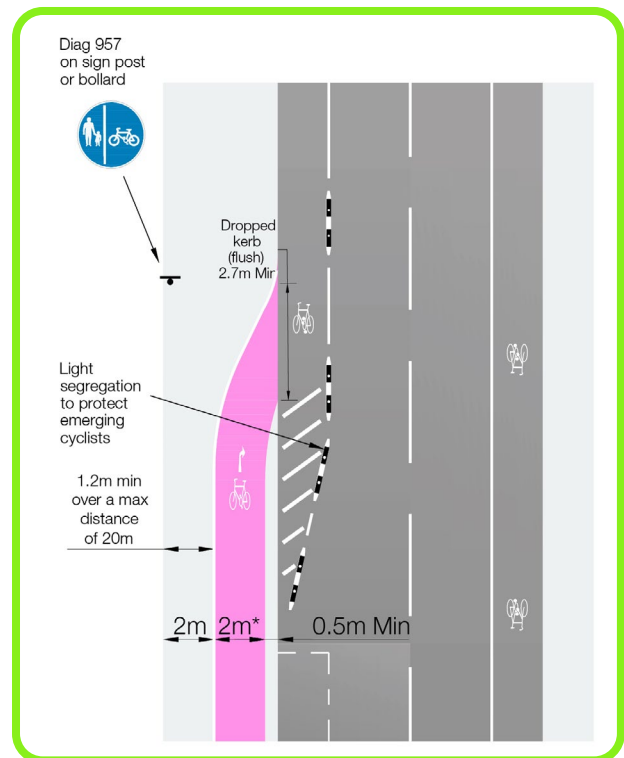


Figure 9-19: Alternative transition between protected unidirectional cycle route and on-carriageway cycle track to accommodate kerbside activity with light protection.



9.11 Transitions between unidirectional and bidirectional cycle tracks

Figure 9-20: Transition between bidirectional and unidirectional cycle tracks via shared section of path.

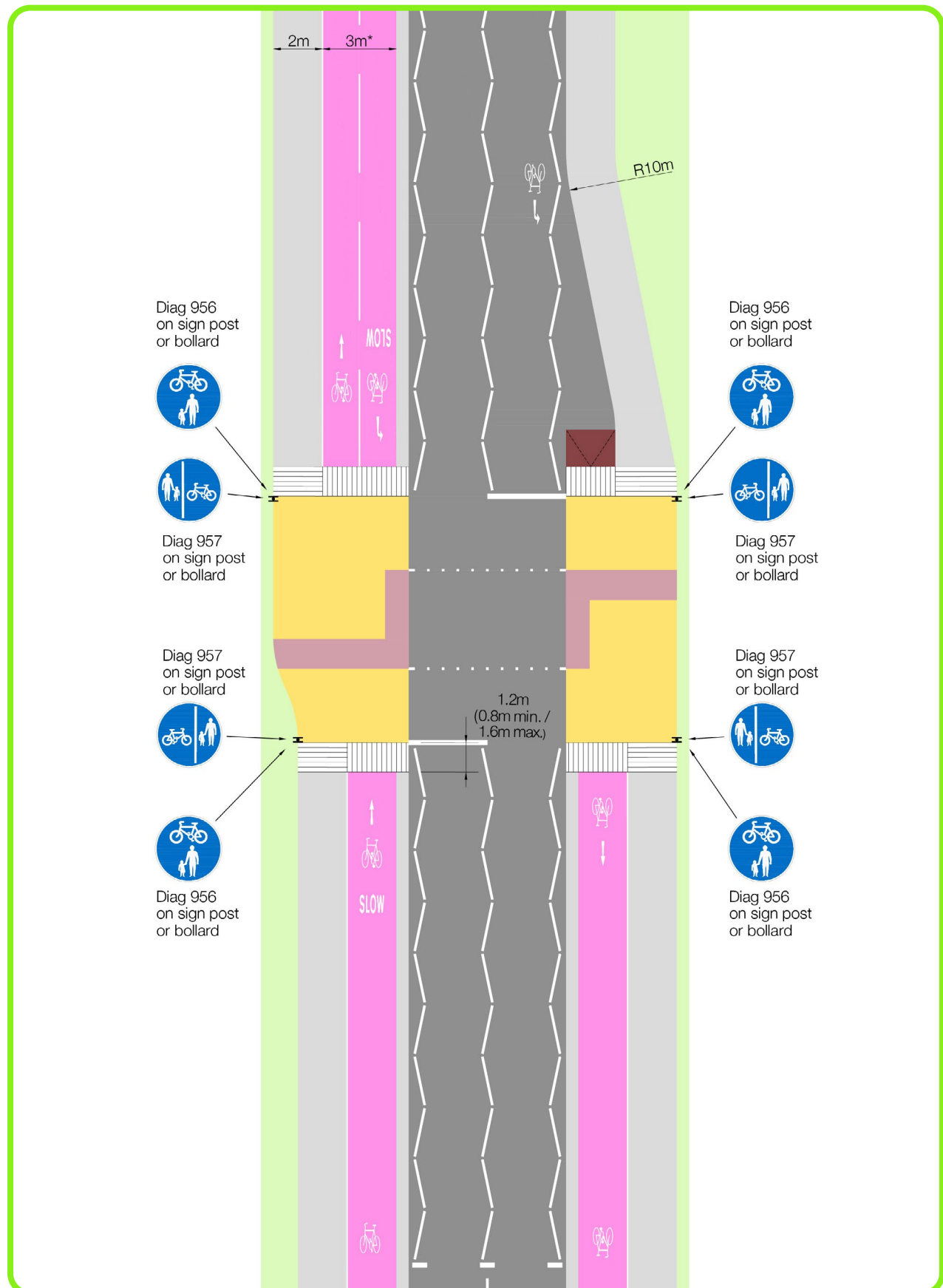
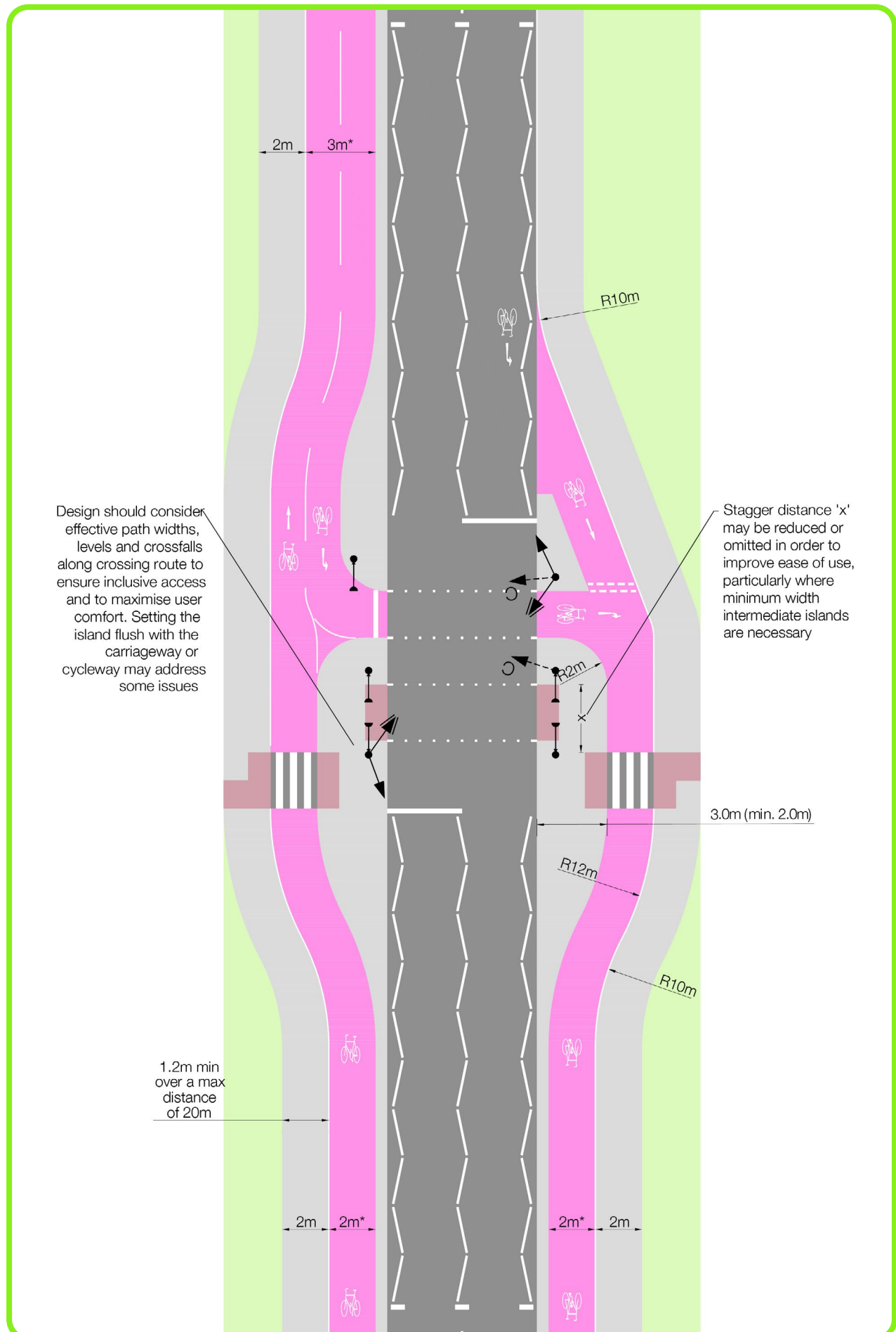


Figure 9-21: Transition between bidirectional and unidirectional separated cycle tracks.



9.12 Transitions between routes in verge and beyond the highway boundary

To create attractive routes alongside busy roads it may be necessary to consider the introduction of sections of routes which sit outside the existing highway boundary – see Section 6.6. This type of provision is often termed ‘behind the hedge’, although it may occur where a hedge, a wall or a significant level difference is found between a path and the adjacent road.

As a route transitions to or from a position further from the carriageway, it should incorporate a gentle sinusoidal alignment with no sudden changes in direction.

If access control features are provided on the ‘behind the hedge’ section of a route, these should be set away from tight bends in the route alignment.

Where only one part of a separated route goes ‘behind the hedge’, for example, the cycle track, with the footway remaining along the carriageway edge, appropriate crossing facilities over the cycle track should be provided.

Some cyclists, particularly during the hours of darkness along an unlit route, may prefer to move back on to the road, and an appropriate connection should be provided to allow them to undertake this manoeuvre.

Figure 9-22: Shared route transitioning between carriageway edge and behind the hedge provision.

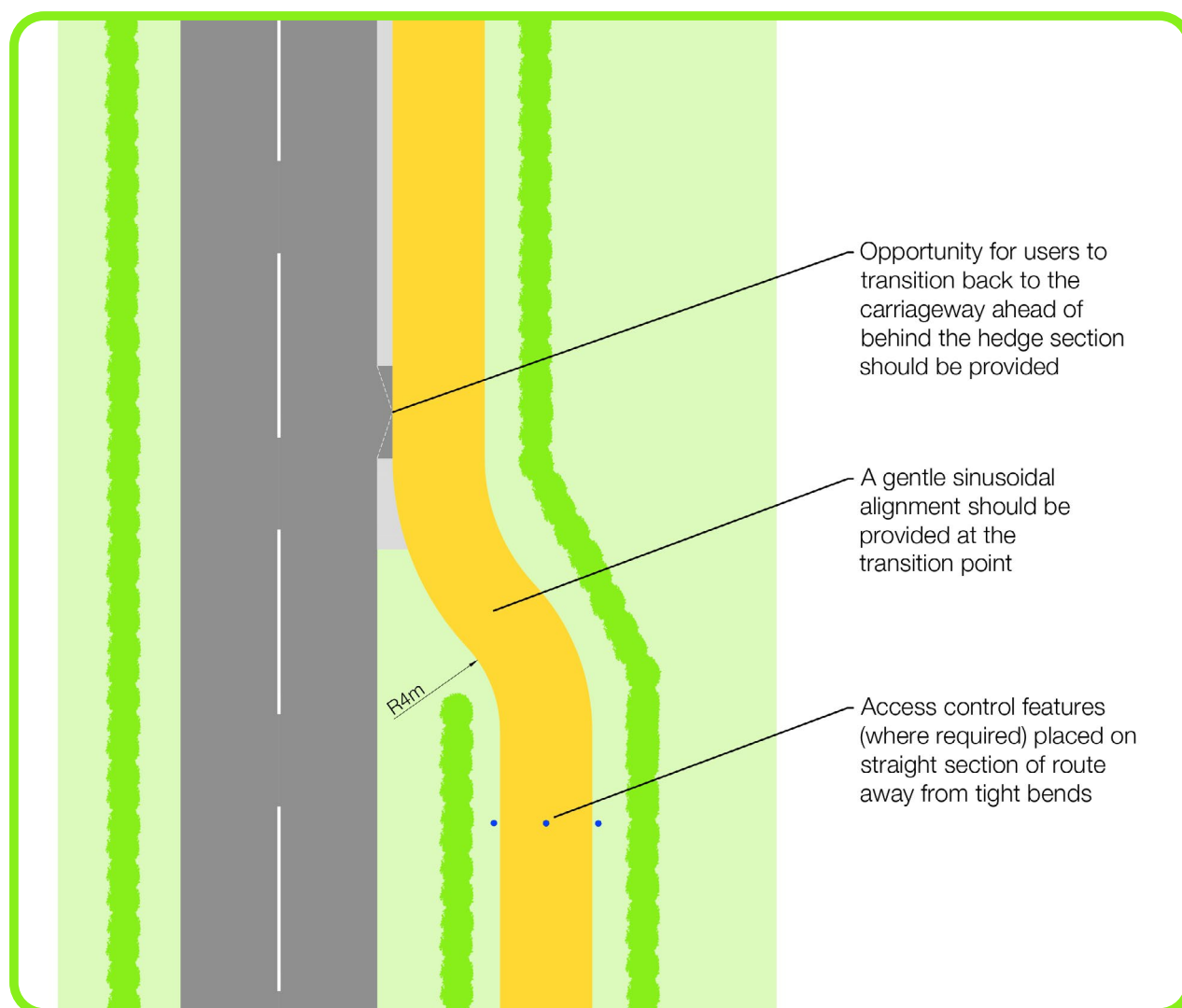


Figure 9-23: Separated route transitioning between carriageway edge and behind the hedge provision.

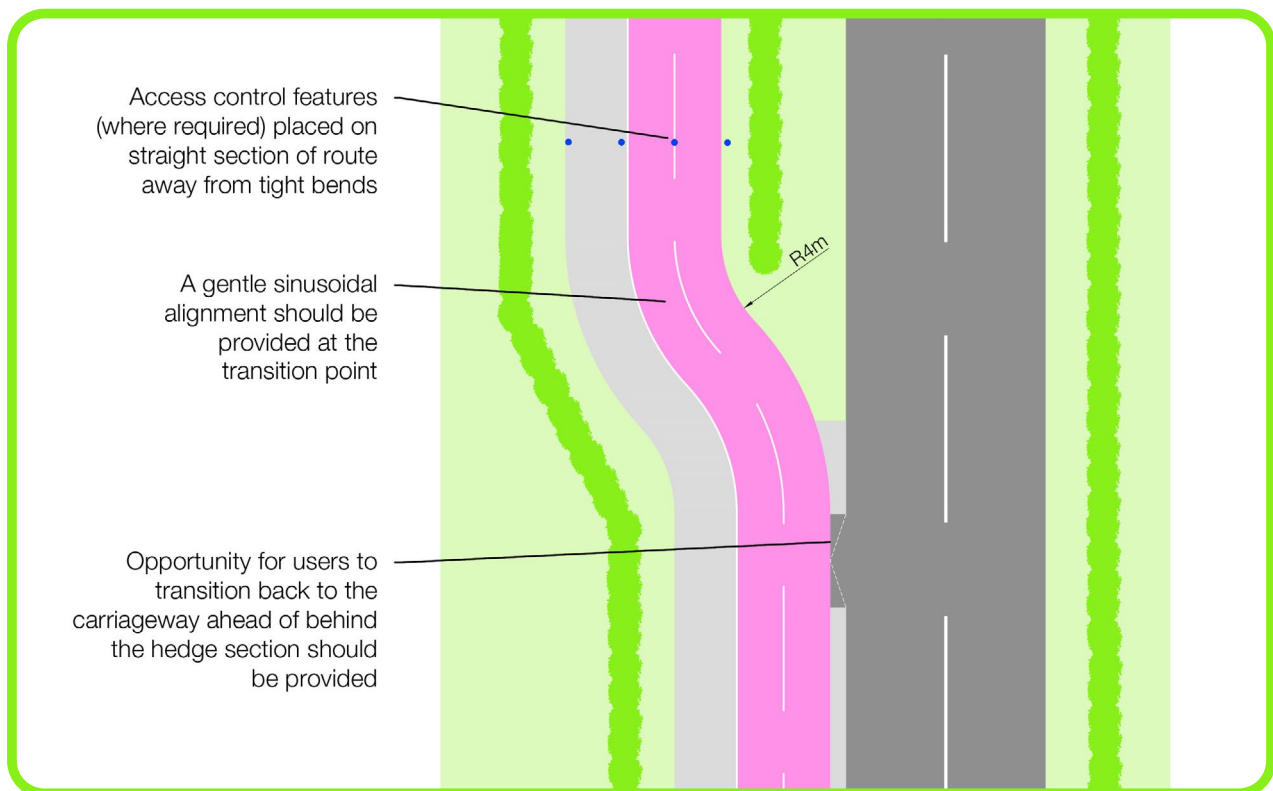
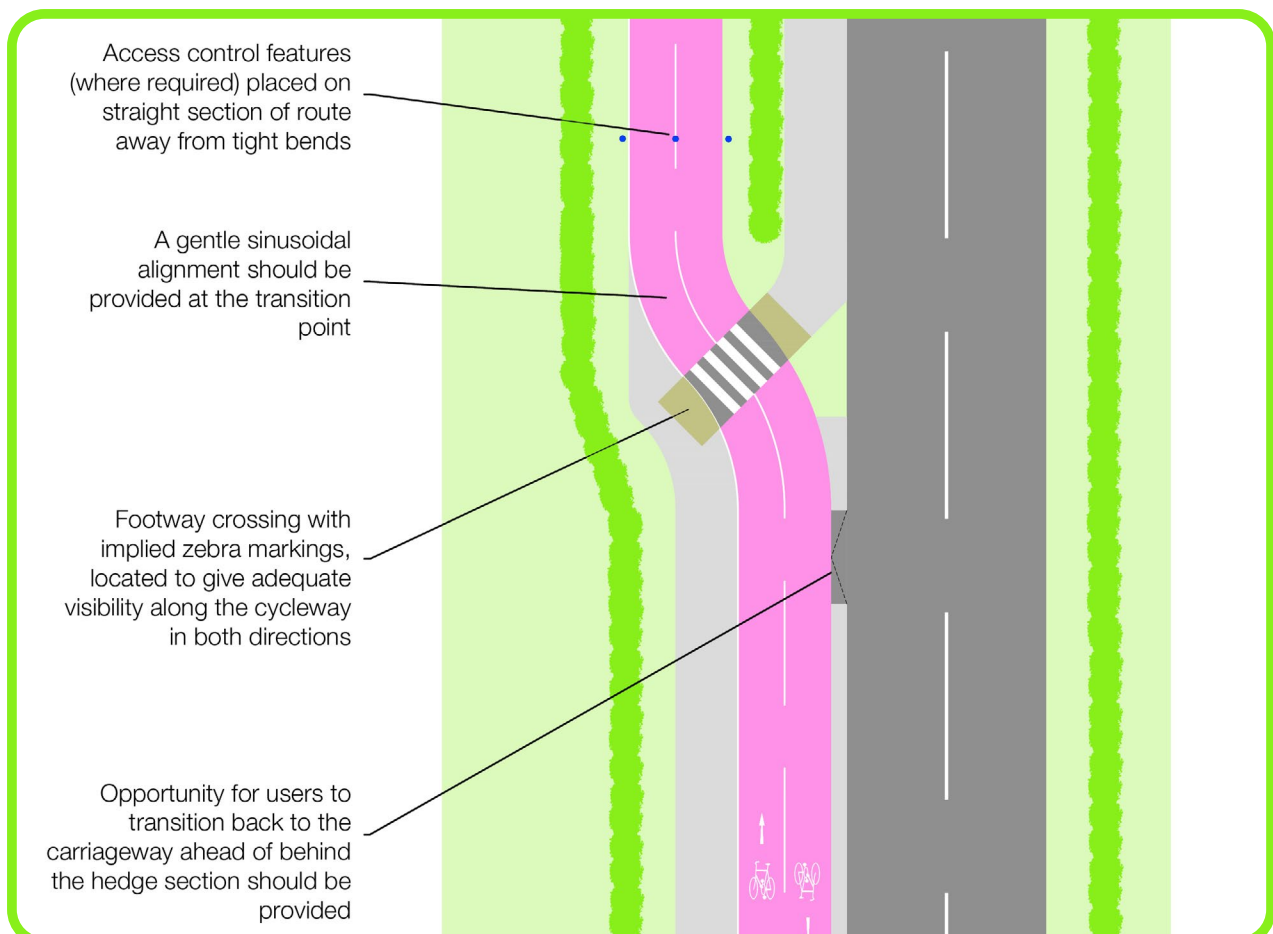


Figure 9-24: Cycle track transitioning between carriageway edge and behind the hedge provision with footway remaining within the verge.





10. Crossings and junctions

10.1 Chapter summary

Crossings and junctions are essential and critical elements in all active routes and networks, but particularly in rural areas between settlements where people walking, wheeling and cycling need to cross fast and busy links and junctions.

Dangerous, indirect and confusing crossing points create weak links in provision, at best discouraging and at worst preventing people making active travel journeys. It is important that suitable facilities are provided that meet the five core design principles for active travel routes set out in Section 4.2.

10.2 Introduction

Chapter 6 of the TSM provides general advice on the design of signal junctions and crossings on roads with a speed limit of 40mph and under. While it is particularly applicable to urban areas, it can be applied in rural areas where appropriate.

Table 10-1 in LTN 1/20 sets out how to apply the five core design principles to cycle provision at junctions. This table also applies to active travel routes in rural areas, other than outside settlements.

However, when applying Table 10-1 in rural areas outside settlements:

- where speeds are higher, it is more likely people walking, wheeling and cycling will have to give way to motor traffic
- the sharing of space at junctions and crossings between cyclists and pedestrians may be acceptable – see Section 4.6

This chapter does not cover designing crossings and junctions for equestrians. Reference should be made to TSM Chapter 6 and DMRB CD 143 for the additional facilities needed to meet their needs.

10.3 General guidance

Crossings are needed where active travel routes cross carriageways, even if the number of pedestrian and cycle movements is low and seasonal.

The crossing assessment process set out in Section 13 of TSM Chapter 6 can be used in both rural areas as well as urban settings. Crossings should be direct in both distance and time and as close as possible to people's desire lines.

People walking and wheeling need facilities to cross at all junctions encountered by active travel routes in rural areas, except on quiet country lanes where people are comfortable to walk in the carriageway.

Similarly, cyclists need crossings at junctions wherever they are using off-carriageway cycle tracks or shared-use facilities.

Cyclists can be integrated with motor traffic when traffic speeds and volumes are low, both between and within rural settlements – see LTN 1/20 Para 10.3.5 and subsequent paragraphs for guidance on the advantages of integrating cycling with motor traffic at junctions.

ATE's Junction Assessment Tool (JAT) has updated the version included in LTN 1/20 and now includes checks on provision for walking and wheeling.

It should be applied to junctions in rural areas, although it may not be necessary to assess movements in all directions if there is no likelihood of people travelling other than on the designated active travel route.

However, adequate crossing facilities are also needed to enable people to reach an active travel route which is along one side of a main road – for example, from side roads or frontage properties on the opposite side. Crossing facilities are also needed to enable people to reach rural bus stops.

Crossings should be lit if they are likely to be used when it is dark. Street lighting should always be provided so that drivers can see people waiting to cross, especially at zebra and parallel crossings where drivers give way to crossing users. Lighting may be activated by the presence of people to reduce any environmental impact. Solar-powered units may be suitable where grid connections are not available. Guidance on the lighting of crossings is given in Section 15.18 of TSM Chapter 6.

Within rural settlements, where speeds and flows are low, well-designed junctions present an opportunity for an enhanced public realm to promote a sense of place. Complex arrangements involving traffic signals and other traffic control devices will add to urbanisation and should be avoided if possible.

Figure 10-1: Informal 'roundel' junction.



10.4 Crossing selection

Table 10-1 adds further context to LTN 1/20 Table 10-2 and should be used alongside it when considering crossings in rural areas. As with the original table in LTN 1/20, Table 10-1 is a guide only and refers exclusively to the safety of the user from motor traffic, rather than incorporating wider concerns such as social safety. Individual locations should be assessed case by case, taking into account the purpose of the route and the types of people expected to use it.

Table 10-1: Crossing design suitability.

Table legend: **Green** – Provision suitable for most people.
Amber – Provision not suitable for all people and will exclude some potential users and/or have safety concerns.
Pink – Provision suitable for few people and will exclude most potential users and/or have safety concerns.

Speed limit ¹	Traffic flow to be crossed in one crossing movement (vpd) ^{2,3}	Number of lanes to be crossed in one movement	Uncontrolled ⁴	Cycle priority	Parallel/zebra	Signal	Grade separated
≥60mph	Any	Any	Suitable for few	Suitable for few	Suitable for few	Suitable for few	Suitable for most
50mph	>8,000	>1	Suitable for few	Suitable for few	Suitable for few	Suitable for most	Suitable for most
	2,000-8,000	1	Not suitable for all	Suitable for few	Suitable for few	Suitable for most	Suitable for most
	0-2,000	1	Suitable for most to not suitable for all	Suitable for few	Suitable for few	Suitable for most	Suitable for most
40mph	>8,000	>2	Suitable for few	Suitable for few	Suitable for few	Suitable for most	Suitable for most
	4,000-8,000	2	Suitable for few	Suitable for few	Suitable for few	Suitable for most	Suitable for most
	4,000-8,000	1	Not suitable for all	Suitable for few	Suitable for few	Suitable for most	Suitable for most
	0-4,000	1	Suitable for most	Suitable for few	Suitable for few	Suitable for most	Suitable for most
≤30mph	>8,000	>2	Suitable for few	Suitable for few	Suitable for few	Suitable for most	Suitable for most
	>8,000	2	Suitable for few	Suitable for few	Suitable for most to not suitable for all	Suitable for most	Suitable for most
	4,000-8,000	2	Suitable for few	Not suitable for all	Suitable for most	Suitable for most	Suitable for most
	4,000-8,000	1	Not suitable for all	Suitable for most	Suitable for most	Suitable for most	Suitable for most
	0-4,000	2	Suitable for most	Suitable for most	Suitable for most	Suitable for most	Suitable for most

1. If the 85th percentile speed is more than 10% above the speed limit the next highest speed limit should be applied.
2. The recommended provision assumes that the peak hour motor traffic flow is no more than 10% of the 24-hour flow.
3. Total flow means total of both directions, if the lane(s) to be crossed is/are two-way.
4. For uncontrolled crossings the traffic flow figures assume an even distribution of traffic. Where the crossing is downstream of a signal-controlled junction consideration should be given of the frequency and duration of crossing opportunities created by the signal timings.

The principal changes from LTN 1/20 are:

- there is greater flexibility over the use of uncontrolled crossings
- zebra crossings have been added
- the parameters better reflect ATE tools

It is possible to use zebra and parallel crossings on roads carrying over 8,000 vehicles per day but further research on the application of zebra and parallel crossings to busier routes is required to assess the safety application. Local context should be paramount in considering crossing selection.

While design speeds and speed limits are typically set according to the geometry of the road, it may be necessary to reduce them locally as vehicle speed is a critical determinant of collision risk and severity, especially for vulnerable roads users. Designers should therefore consider where operating speeds may undermine the safety or intended function of proposed active measures and how these can be reduced if appropriate.

The [ATE Crossing Selector tool](#) provides some further guidance on crossing choice, in the context of connecting two side streets in urban areas. Some of the principles and design approaches may be applicable in rural areas.

10.5 Uncontrolled crossings

The use of uncontrolled crossings such as refuge islands where pedestrians and cyclists have to wait for gaps is principally limited by traffic flow, as delays become excessive as volumes increase, and this has informed the values in Table 10-1. The task of crossing the road is also made more difficult as the number of lanes to be crossed increases.

Reducing the design speed in the vicinity of the crossing point will also be desirable.

Short lengths of reduced speed limit are generally ineffective, so this will only be an option if a lower limit is also appropriate on the approaches to the crossing. Guidance on the minimum length of speed limits is given in [Circular 1/13](#).

Single lane narrowing

On country lanes with low flows and where 85th percentile traffic speeds do not exceed 35mph, it is desirable to narrow the carriageway at crossing points, which can be achieved at low cost by the use of edge markings – see Figure 10-2.

Figure 10-2: Uncontrolled crossing with single lane narrowing.

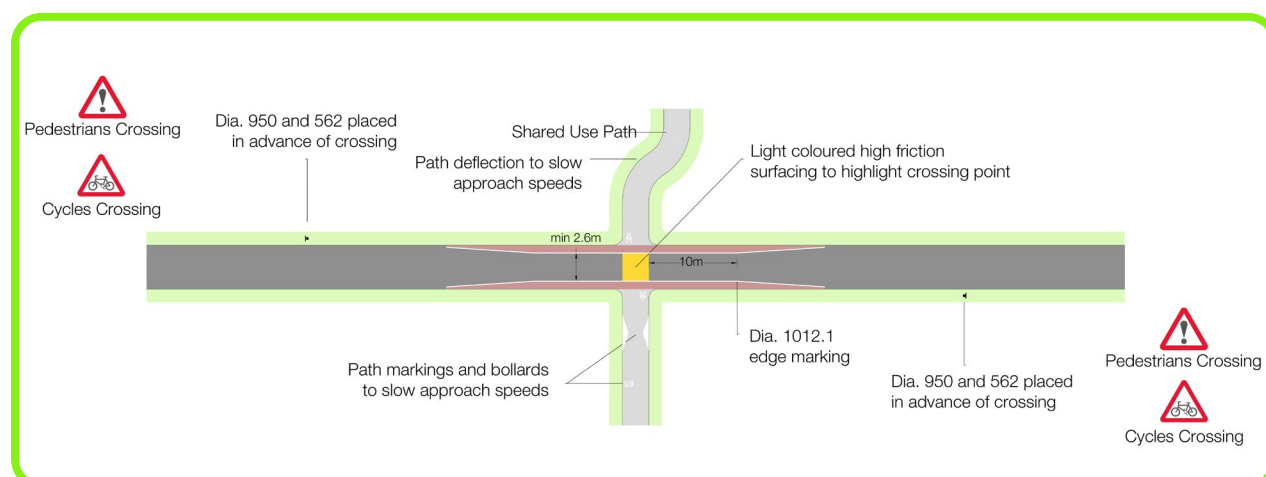


Figure 10-2 also shows the following two desirable features:

- contrasting surfacing and warning signs on the approaches to highlight the presence of the crossing point. However, there should be a contrast between the active travel route and the crossing point
- measures to slow cyclists on the approach to the crossing, either using deflection or markings and a narrowing with bollard

Crossings with refuges

A central refuge is desirable on roads with two lanes (one in each direction), as it makes the task of looking for gaps in traffic less stressful, with people needing only to face in one direction – see Figure 10-3. As traffic flows increase, however, the possibility of having to wait for some time on a refuge increases, so this will not be comfortable when flows are high – see Table 10-1.

Refuge islands away from junctions should not be used where the speed limit is above 40mph.

Figure 10-3: Uncontrolled crossing with central refuge.

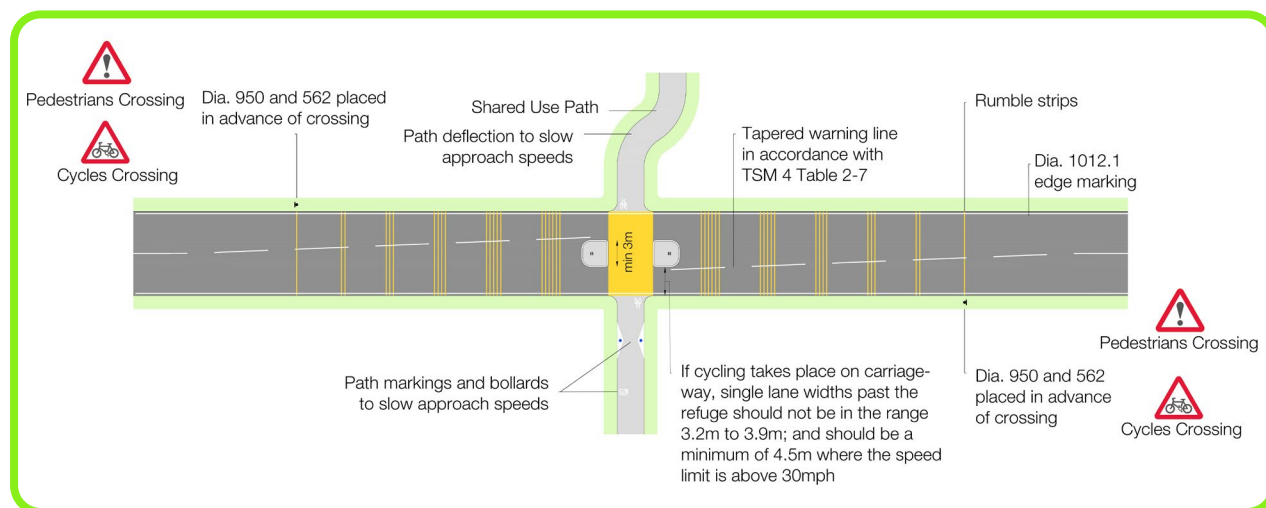


Figure 10-3 includes rumble strips to slow traffic on the approach to the crossing, and highlight the crossing's presence. Rumble strips can cause noise disturbance, however, so would not be appropriate in residential areas and other sensitive locations such as schools, hospitals and care homes.

In line with LTN 1/20, central refuges should be free of clutter, and at least 3m long (in the direction of travel for people walking, wheeling and cycling).

The width of the crossing (in the same direction) should be sufficient to accommodate the anticipated demand, taking into account the potential for people to be travelling in groups, such as families.

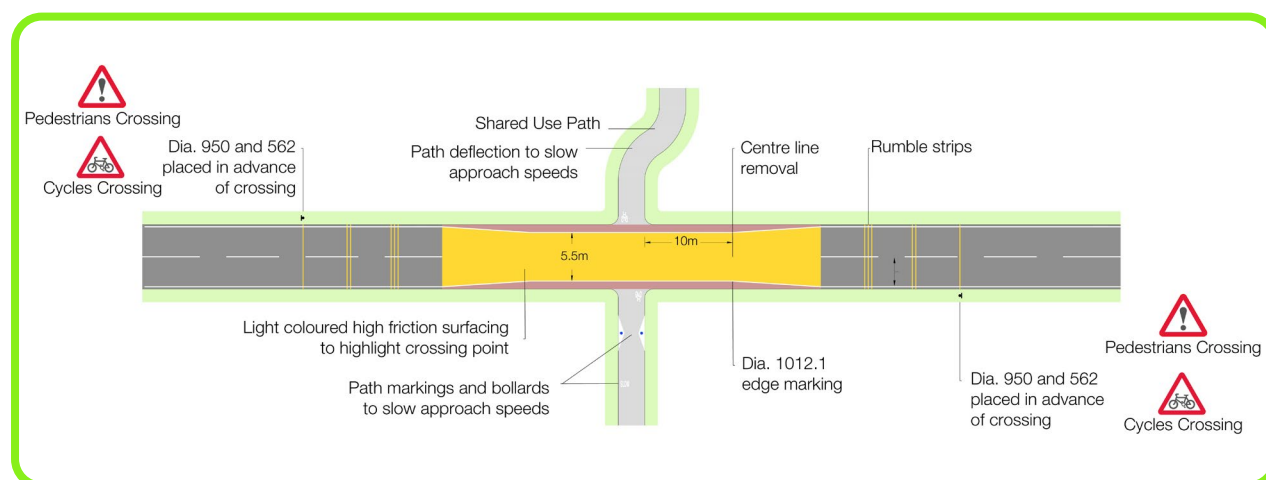
If cycling takes place on the carriageway, single lane widths past the refuge should not be in the range of 3.2m to 3.9m. They should be a minimum of 4.5m where the speed limit is above 30mph.

Refuges should not be used where people need to cross more than two lanes in one movement.

Two-lane crossings

Where traffic flows are too high for a single lane narrowing and there is insufficient space to provide a refuge, visual narrowing of the carriageway should be considered to highlight the presence of the crossing and encourage lower speeds – see Figure 10-4.

Figure 10-4: Uncontrolled crossing of two-lane road.

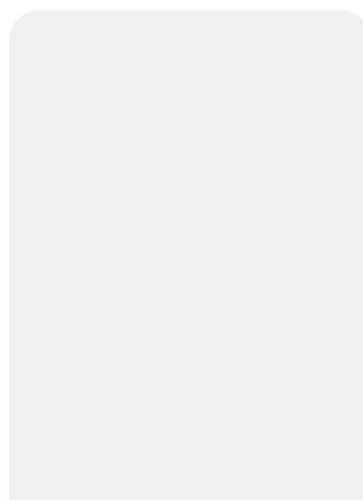


Uncontrolled crossings without refuges should not be used on wide roads with more than one lane in each direction.

If sufficient land is available to accommodate the extra width needed when turning, providing a change in the route alignment on the approach to a road or crossing point can encourage path users to slow down – see Figure 10-5. However, this can disrupt any through sightlines along the route, so signs and markings may therefore still be required to provide enough advanced warning of the road or crossing point.

Designers should ensure that any direction change can accommodate the turning radius and manoeuvrability of a large mobility vehicle as well as the cycle design vehicle.

Figure 10-5: Path turns through two 90-degree bends on approach to crossing with path marking to highlight the need to slow and give way.



Visibility plays at uncontrolled crossings

Adequate visibility plays should be provided at uncontrolled crossings to enable people walking, wheeling and cycling to look for gaps in approaching traffic and decide when it is safe to cross. As a minimum, drivers must be able to stop before reaching the crossing.

Absolute minimum sight distances at uncontrolled crossings are given in Table 10-2. These are based on stopping sight distance, the time needed for a vehicle to stop before reaching a hazard on the road ahead. Values up to 40mph have been taken from Table 15-1 of TSM Chapter 6.

Values for 50mph and 60mph roads are one step below desirable stopping sight distances taken from DMRB CD 109, Highway Link Design.

As shown in Figure 10-6, these visibilities should be measured to the near-side kerb line from a point 2.4m back from the carriageway to cater for cyclists waiting to cross, as they will be furthest back. If necessary, it would be better to achieve this by locally narrowing the carriageway rather than removing any hedgerow.

Figure 10-6: Absolute minimum visibility plays at uncontrolled crossings.

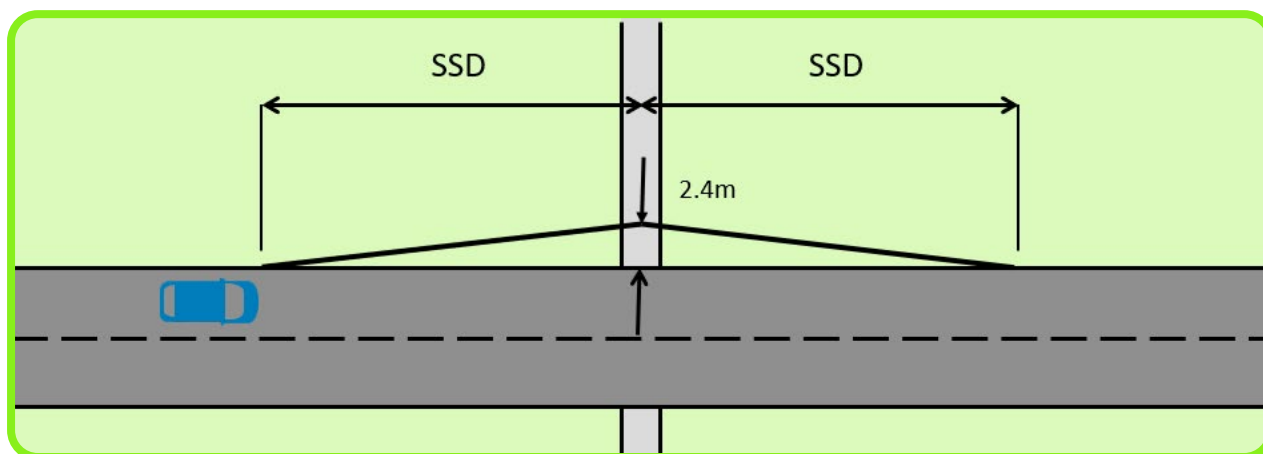


Table 10-2: Absolute minimum sight distances at uncontrolled crossings based on stopping sight distance

85th percentile speed (mph)	20	25	30	35	40	50	60
Absolute minimum sight distances at crossings (m) based on stopping sight distance	22	31	40	51	80	120	160

Wherever possible, substantially longer visibility distances along the carriageway should be provided to enable people to judge whether they have time to cross in comfort between gaps in oncoming vehicles.

Where sufficient visibility is not possible for the current traffic speed it will be necessary to reduce speeds locally, principally through lower speed limits, traffic signs and other non-physical measures, as set out above.

10.6 Controlled crossings

Where traffic volumes and speeds necessitate them, controlled crossings – zebra, parallel and signal-controlled – will be required. Guidance on the planning and design of controlled crossings is given in TSM Chapter 6, and recommended values for the use of these crossing types are given in Table 10-1.

Zebra and parallel crossings

In summary, zebra and parallel crossings (the latter also providing a crossing for cyclists) are only suitable for most people in built-up areas when 85th percentile speeds are no more than around 30mph. They are therefore not recommended for rural areas between settlements.

In the right location, however, zebra and parallel crossings give a high level of service to pedestrians and cyclists, with minimal delay. This type of crossing does create some visual impact due to the need for yellow globes and zig-zag markings on the approaches, which may be unwelcome in some historic settings. It is permitted to reduce the number of zig-zags to two, where the layout or character of the road makes it impractical to lay eight. However, this should not be at the expense of ensuring pedestrians can see and be seen on the crossing.

Zebra and parallel crossings may be used in close proximity to junctions, including roundabout arms – see Section 10.7 for examples. Chapter 6 of TSM provides details regarding the distances required.

Signal-controlled crossings

Where there is a need to cross busier streets with traffic speeds up to an 85th percentile of 35mph, signal-controlled crossings should be provided.

Signal-controlled crossings should be kept as simple as possible and with short cycle times. A pre-timed maximum should be used so that the change to the pedestrian period (and cycle period where provided) begins as soon as a demand to cross is registered.

Crossings should operate in a single phase wherever possible to allow people to complete the whole crossing in one movement, reducing delay. Where the crossing needs to operate in two stages due to concerns over traffic capacity, a stagger is not needed if the central refuge is wide enough so that people understand that each part of the crossing operates separately. Experience has shown that a central refuge of around 5–7m is sufficient – see TSM Chapter 6 Para 18.3.4.

Where pedestrians and cyclists share a route on the approach to a crossing, it is acceptable to have shared provision at signal-controlled crossings, which should be provided as toucans. Where pedestrians and cyclists are separated, a signal-controlled parallel crossing can be used – see Figure 10-7. Where used as a stand-alone crossing, zig-zag markings must be provided, and authorisation will therefore be needed from the DfT.



Figure 10-7: Parallel, separated pedestrian and cycle crossing, Hampshire.



Staggered crossings are not recommended and should not be used on routes used by cyclists. They can be highly problematic and sometimes impossible for those using non-standard cycles and people using large mobility devices. There is little room to manoeuvre and cyclists can conflict with pedestrians using the same space.

Two-stage cycle crossings do not need a stagger as cyclists must obey a red signal within a central refuge, although the island must be deep enough to store cycles and mobility scooters safely. Where a stagger is required for pedestrians, the cycle crossing can be provided separately as part of a signal-controlled parallel crossing.

A direct signal-controlled crossing over four lanes of the A27 was provided as part of the A27 East of Lewes case study, which catered for pedestrians, cyclists and equestrians – see Figure 10-8.

Figure 10-8: Signal-controlled crossing – A27 East of Lewes case study.



Crossings linking country lanes

Where an active travel route is following a country lane that is interrupted by a major road, a suitable crossing will be needed to connect back to the lanes on either side. Figures 10-9 and 10-10 show two options for such a crossing, one unsignalised and one signal controlled.

Note that a controlled crossing may not be appropriate on roads with higher speed limits, however where actual vehicle speeds are below 40mph some locations may be suitable. For more information see TSM Chapter 6.

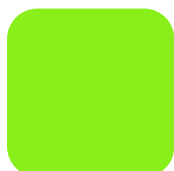


Figure 10-9: Toucan crossing linking country lanes.

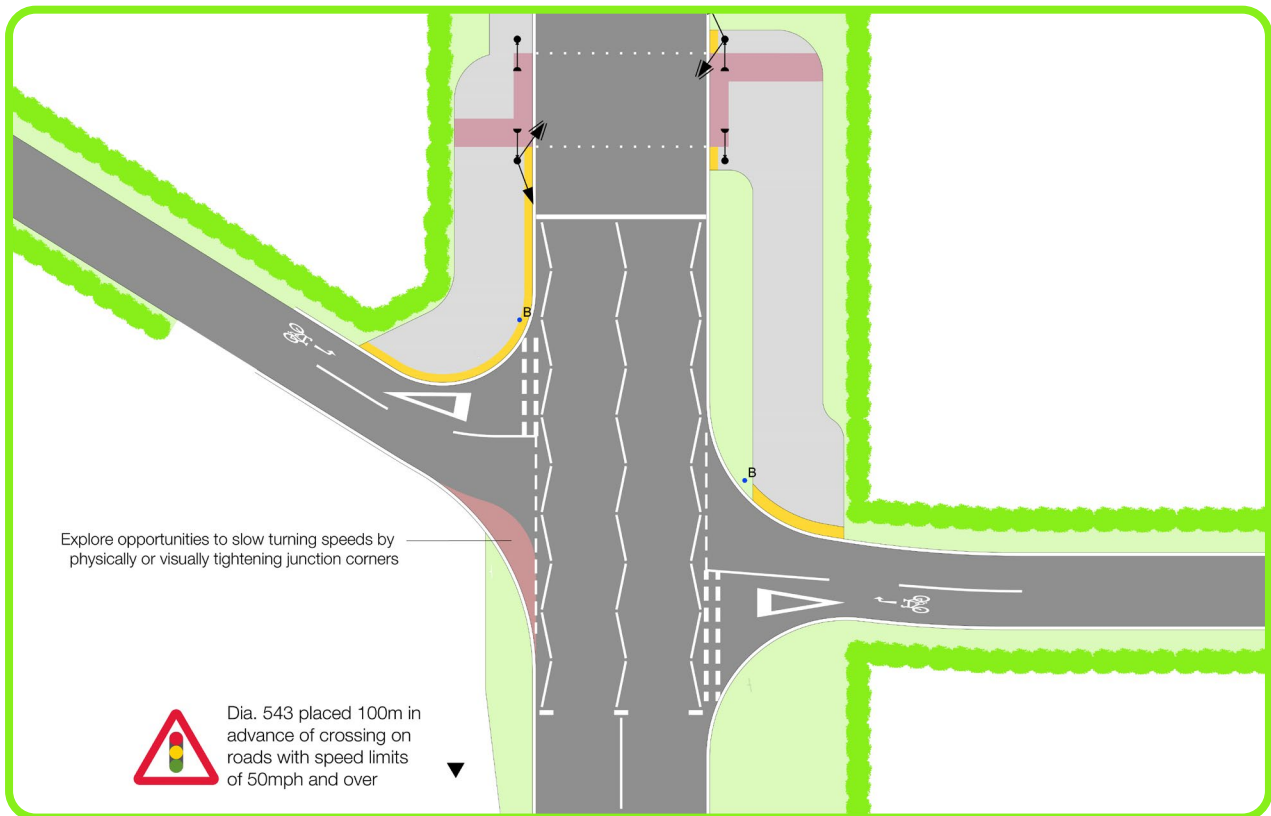
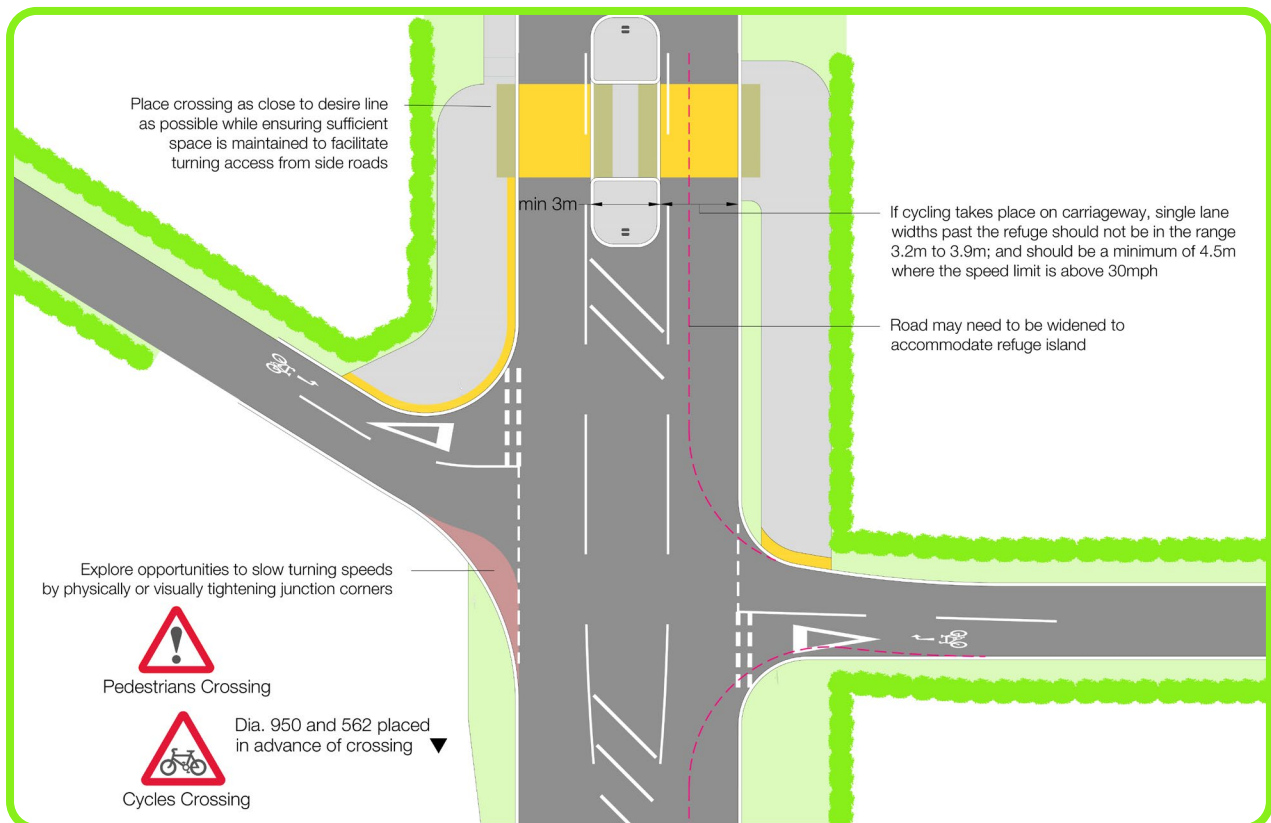


Figure 10-10: Uncontrolled crossing linking country lanes.



An example of a signal-controlled crossing linking two country lanes across a busy road is shown in Figure 10-11 to the right.

Figure 10-11: Signal-controlled crossing linking Chilton Road and Station Road across A417, Oxfordshire.



10.7 Grade-separated crossings

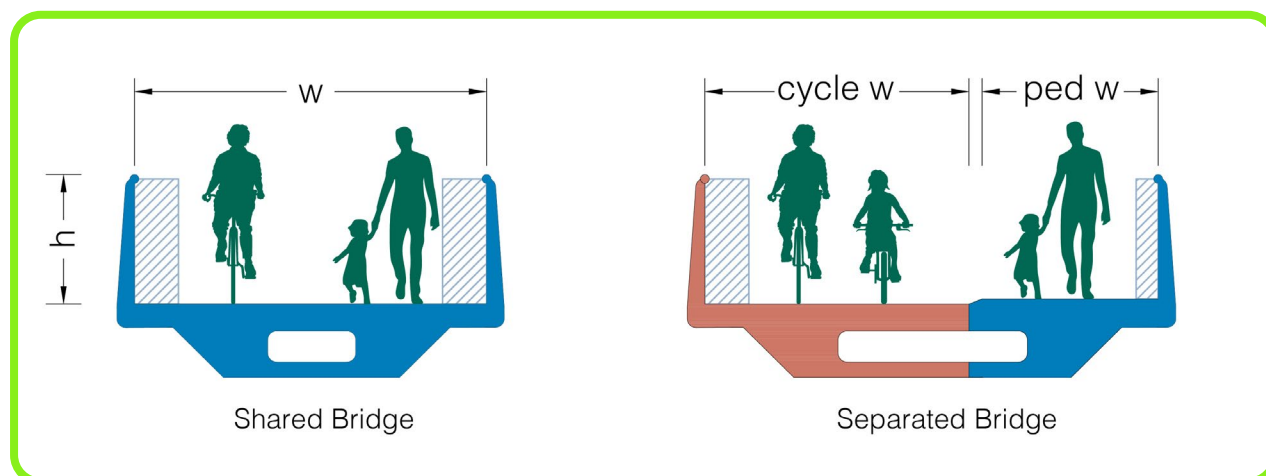
This section covers bridges serving walking, wheeling and cycle routes, potentially shared with low numbers of motor vehicles, for example farm access tracks. Section 6.8 covers provision for active travel on bridges carrying general motor traffic.

Grade-separated crossings can provide a high level of service for active travel users if they are done well. However, it is important to minimise any deviation both horizontally and vertically and to ensure good connectivity – both at either end of the crossing and to the feature (such as a road) being crossed, if it is itself an active travel route.

There can also be personal safety concerns associated with both under and overbridges as they are constrained locations. They should be as short as possible with clear sightlines and good natural illumination to mitigate these issues.

Grade-separated crossings can be shared or separated between pedestrians and cyclists depending on the approach routes (Figure 10-12). The usable deck width should take into account the additional width needed by cyclists and people using wheelchairs and mobility devices to keep clear of fixed objects given in Table 5-3 of LTN 1/20. Where the parapets adjoin the usable surface this means a desirable minimum deck width of 4m on shared-use bridges and 5.5m on separated bridges.

Figure 10-12: Overbridge widths and parapet heights.



Underpasses can be practical for people to use, particularly for people wheeling and cycling as they can maintain momentum on the downhill approach to the structure if the crossing is set below the level of the approaches. Where the road or other barrier to be crossed is on an embankment the active travel route can be maintained at the same level. Good lighting, building on natural illumination through openings, and direct sightlines are important. Further guidance on improving natural lighting in underbridges is given in LTN 1/20 Para 10.8.18.

Figure 10-13: Underpass for walking, wheeling, cycling and equestrians beneath A1237, Knapton, York.



Overbridges can create a strong statement of the importance of the route and advertise its presence to passers-by – see Figure 10-14. However, as costs for structures can be high, value for money should be considered to ensure that aesthetic choices do not prevent the rest of the route from achieving a high-quality outcome.

Figure 10-14: Chadkirk Bridge on NCN 55, Bromley.



Green bridges carry a wide belt of landscape across major roads and other barriers, and provide connectivity for flora and fauna as well as for active travel. The experience of crossing a green bridge is attractive, with the feeling that the countryside continues uninterrupted – see Figure 10-15.

Figure 10-15: Scotney Castle Land Bridge, Kent.



Chapter 5 gives guidance on gradient and horizontal curvature that should be applied to ramps. Steps should also be provided to enable non-disabled pedestrians to take a more direct route to the crossing in both distance and time.

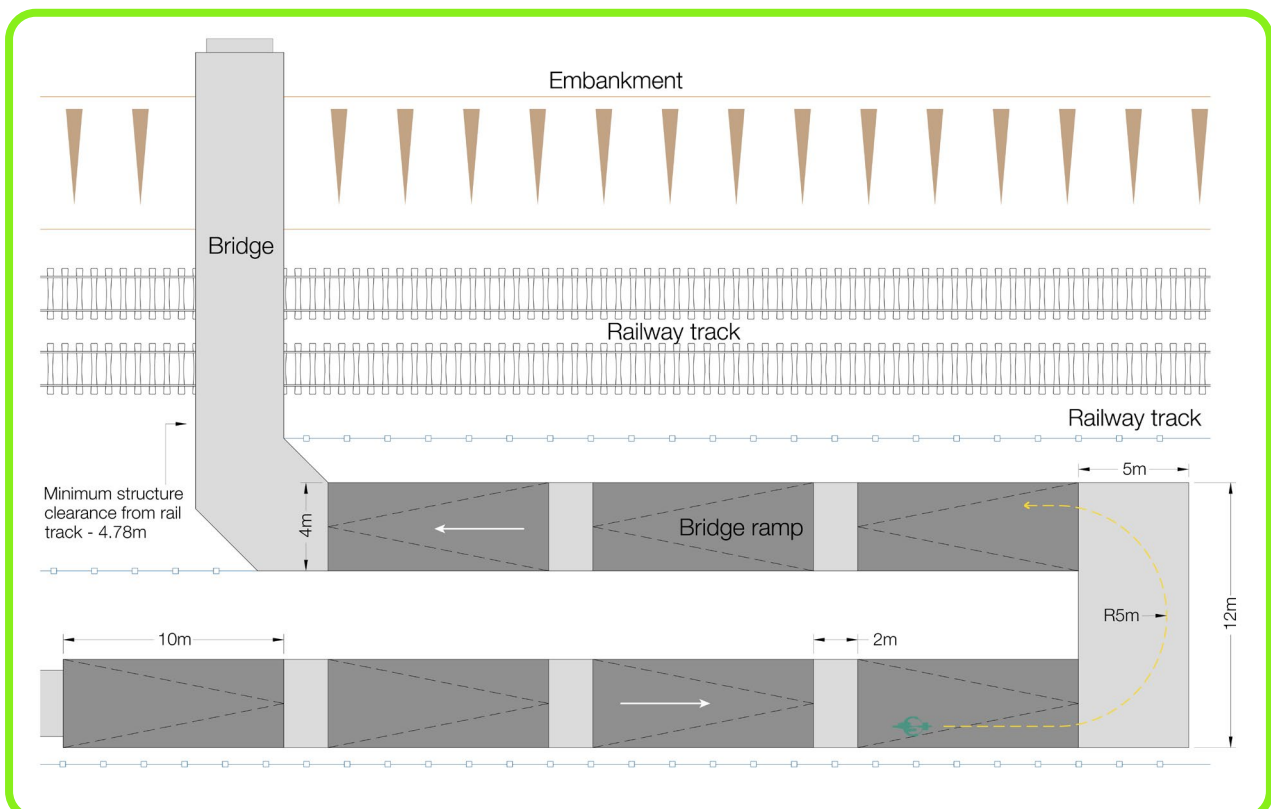
Curves are preferable at the changes of direction to provide a smooth alignment for mobility scooter riders and cyclists, which can also create a strong design statement – see Figure 10-16. While this is an urban example the same principles can be applied in rural locations.

Figure 10-16: Spiral ramped access to bridge, Vienna.



If curves are not feasible due to budgetary or other constraints, then there should be gaps between the ramps to allow users to follow a minimum curve outer radius of 5m and a minimum curve inner radius of 2.7m at the changes of direction (Figure 10-17).

Figure 10-17: Ramp detail.



Guidance on parapet heights for cycle routes is given in LTN 1/20 Para 10.8.14 and subsequent paragraphs, and these requirements exceed those for walking/wheeling routes only. In the past some existing and historic bridges, including farm accommodation bridges, have been deemed unsuitable for cycling because the parapets are less than the desirable standard of 1.4m for new structures. Lower parapet heights can be retained where the risk of a cyclist surmounting a parapet is low – further guidance on assessing parapet heights is given in the reference provided in LTN 1/20, [Determination of appropriate railing heights for bicyclists, NCHRP 20-7 \(168\), AASHTO, 2004](#). If necessary a barrier or other feature can be installed that prevents cyclists from riding alongside the parapet – see Figure 10-18.

On the B3181 in Devon, a stepped cycle track was provided – separated from the existing parapet by the footway, rather than incurring the high cost of raising the parapet.

Figure 10-18: Stepped cycle track across bridge separated from low parapet by footway, Devon.



Where new parapets are provided, designs which taper outwards to give greater clearance at handlebar height for child and adult cyclists and wheelers will maximise the effective width of the bridge, increasing comfort and safety for all users – see Figure 10-19.

Figure 10-19: Flared parapets, Dublin.



Where the route is usable by equestrians, the recommended minimum parapet height is 1.8m if a horse's line of travel is likely to be within 2m of the parapet, and 1.5m high if further away. However, a lower height will be acceptable in some situations, such as a single-track accommodation bridge with a low incidence of other users, where an equestrian may take the centre line. Further guidance on bridges and parapets on equestrian routes is available from the [British Horse Society](#). Where the recommended standard for equestrians cannot be met, mounting blocks at each end of a bridge should be provided.

10.8 Junctions

Off-highway routes across side roads

Where off-carriageway routes are in or just beyond the verge of a major rural road with a speed limit greater than 40mph, it will not normally be appropriate for people walking, wheeling and cycling to have simple priority across side roads due to the speed and volume. Pedestrians can only be given priority through the use of a zebra crossing, which may be inappropriate in non-built-up areas or out-of-keeping on roads with speed limits over 30mph. They cannot be given priority using give way markings, which only apply to vehicles.

If people walking need to take additional time to wait for a gap in traffic to cross a side road, or for a green signal if a crossing is signal controlled, then this is less significant in overall journey terms than in urban areas where side streets are much more frequent. Accessibility and safety issues may appear if long waiting times are assumed.

The choice of crossing type on the minor road should be based on Table 10-2. When flows and speeds are low, a simple uncontrolled crossing will be acceptable. A refuge may be required as flows increase and will generally be helpful. If flows and speeds are higher, a signal-controlled crossing will be needed – but this would need to be set back some distance from the junction to accommodate zig-zags, and avoid queuing back onto the main road, which may be difficult to achieve. Signalising the whole junction, incorporating a crossing of the minor road, may then be necessary.

Where uncontrolled crossings are provided, they should be set well back from the edge of the major carriageway so that people walking, wheeling and cycling are able to ascertain when vehicles are about to turn into the junction.

The desirable minimum set back distance is 10m, as shown on LTN 1/20 Figure 10-19. This desirable distance may be reduced when the minor road carries less than 2,000 vehicles per day to enable crossings on or nearer desire lines. People waiting to cross should be able to see cars turning left into the side road.

Junction radii may be reduced to the minimum necessary for vehicles to turn into the junction and reducing the speed of turning vehicles. The regularity of demand from agricultural vehicles should be considered as part of this process. This will shorten the crossing distance for pedestrians and so reduce their exposure.

An example of a set-back crossing of a minor road is shown in Figure 10-20.

Figure 10-20: Off-carriageway route crossing minor road, South Gloucestershire.



Major inter-urban junctions

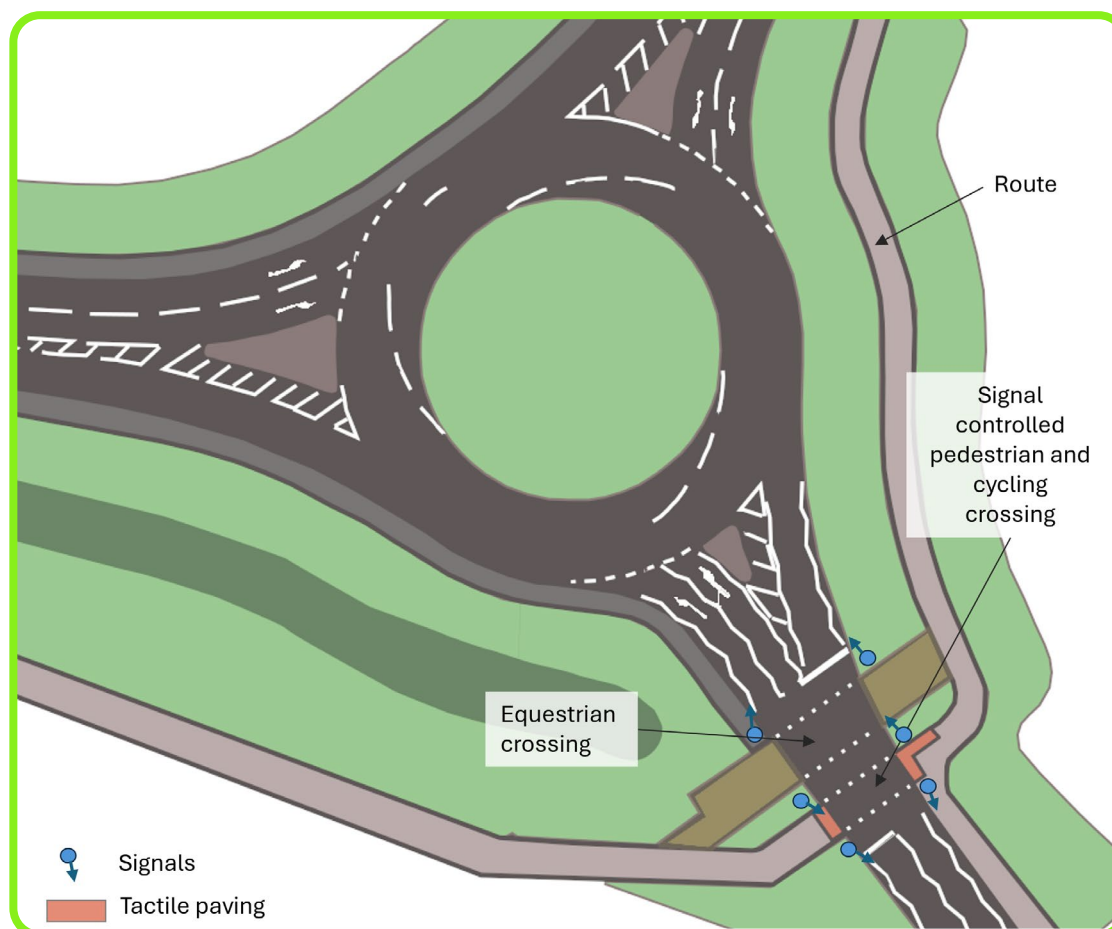
Active travel routes should always be separated from motor traffic at major inter-urban junctions where vehicles travel at high speeds and at high flows. On the strategic road network this is in line with recommendations in CD 195 of the DMRB. All crossings at major junctions should follow the general guidance given in Section 10.5. In particular, crossings should be on or close to desire lines, as direct as possible in both distance and time, easy to understand and well connected to the rest of the active travel network. Additional wayfinding may be needed at large junctions – see Chapter 12.

Crossings at major junctions should be provided in accordance with Table 10-2, which provides guidance on the maximum number of lanes to be crossed, depending on the speed and volume of motor traffic.

Rural ‘normal’ roundabouts (as defined in DMRB CD 116) typically have wide multi-lane entries and exits, which are difficult for people walking, wheeling and cycling to cross via uncontrolled crossings. DMRB CD 116 states that uncontrolled crossings should be within 20m of the give way line, and designers should consider the maximum number of lanes to be crossed in accordance with Table 10-1. Such roundabouts, due to their wide entries and circulatory carriageways where motor vehicles can travel at speed, result in more hostile conditions for cyclists who remain on carriageway and so the provision of good off-carriageway facilities and crossings is very important.

At higher flows and speeds this will require crossings to be signal controlled, which should be provided as close as possible to people’s desire lines – see Figure 10-22 from the M55 to Heyhouses Link Road case study.

Figure 10-21: Signal-controlled active travel and equestrian crossing, M55 to Heyhouses Link Road case study.



Signalisation of the whole roundabout may also be an option, with crossings integrated into the design as shown in LTN Figure 10-41.

Rural traffic signal-controlled junctions should include pedestrian, cycle and equestrian crossing facilities as appropriate wherever active travel routes need to be accommodated.

Grade-separated crossings can carry active travel routes across major junctions, including grade-separated junctions, to provide a high level of service, albeit at a high cost – see Figure 10-23.

Figure 10-22: Hams Way bridge, Worcestershire.



10.9 Major junction design

To date, the following designs have mostly been applied in major urban areas but can be applied in market towns and other built-up areas of the countryside for the benefit of those walking, wheeling and cycling. It should be noted that these junction designs too often require significant space and so may not be suitable in all cases. However, where there are significant flows of motor traffic, they can provide an effective way of linking active travel routes across otherwise significant causes of severance.

Circulating cycle and pedestrian stage/Cyclops junctions

This type of layout typically involves a stage where pedestrians and cyclists are given a green signal to cross all arms of a junction (and with cyclists circulating clockwise) while all general traffic is held on red. The example given in Figure 10-24 in LTN 1/20 has cyclists on the inside of the pedestrian crossings.

Cycle Optimised Protected Signals (Cyclops) junctions have now been built which operate on a similar method of control to that described in LTN 1/20, but place the cycle track on the outside of the pedestrian crossings. Advantages of this arrangement include:

- pedestrians can make diagonal crossing movements
- cycle turning radii are greater
- potential for low to no impacts on vehicle flows
- there is more space for cyclist stacking
- there are fewer points where pedestrians need to cross cycling space

The overall size of the junction is larger, however, than when the cycle tracks are on the carriageway side. Figures 10-24 and 10-25 shows a Cyclops junction that has been constructed in Cambridge.

Figure 10-23: Cyclops junction, Milton Road, Cambridge.

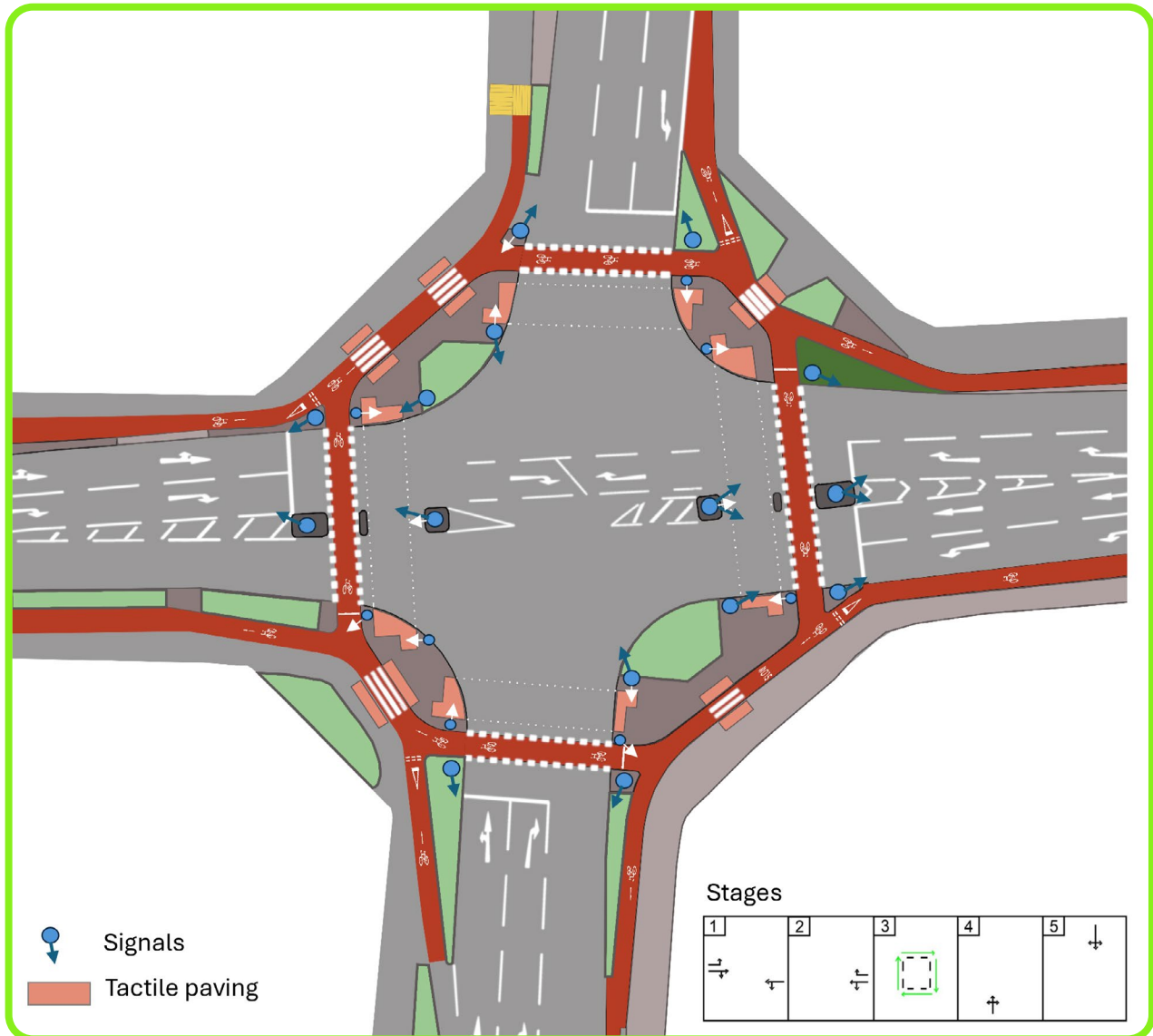


Figure 10-24: Roundabout with controlled crossings, Milton Road, Cambridge.



Roundabouts with controlled crossings

Figure 10-37 in LTN 1/20 includes a planned roundabout in Cambridge with a circulating one-way cycle track and parallel crossings on all arms. This scheme, at the junction of Queen Edith's Way and Fendon Road, has now been built.

Other junctions of a similar type have been constructed elsewhere in the UK, including in smaller settlements. Figure 10-25 shows a scheme in Chichester, West Sussex, that was funded by a local residential development.

Figure 10-25: Roundabout with parallel crossings, Chichester.



A similar arrangement has been built on a further junction on Milton Road, Cambridge, but using signal-controlled crossings on some arms of the junction – see Figure 10-26.

Figure 10-26: Roundabout with signal-controlled crossings, Cambridge.



Circulating cycle and pedestrian stage layouts and roundabouts with controlled crossings can also be constructed at major junctions in rural areas. Where the active travel facilities are shared between pedestrians and cyclists, toucan crossings should be used to enable people to cross. Parallel crossings will not be suitable for use when traffic speeds are high.



11. Features in the rural landscape

11.1 Chapter summary

This chapter provides details on features that support a successful rural active travel scheme. This includes guidance on incorporating a route's existing heritage, points of interest, and viewpoints.

It also discusses how to add value to places by including features such as accessible seating, play spaces for children, art, and gateway features. Active travel routes in rural areas can both make use of existing features in the countryside, and provide an opportunity to improve their immediate surroundings.

11.2 Introduction

Creating attractive routes that are engaging is crucial to meet the core design principles set out in LTN 1/20. It also helps to encourage the uptake of walking, wheeling and cycling in rural areas and deliver wider benefits.

Active travel routes in the rural landscape can provide opportunities to celebrate the historical and geographical identity of a place. They can be powerful tools for exploring and understanding a region's historical identity, connecting people to nature, landscape and heritage. They encourage people to visit areas through walking, wheeling and cycling, and the routes themselves are often destinations in their own right.

Features along routes can help to link individuals to their surroundings, reinforcing the sense of place and improving the quality of the travel experience. They include features within the landscape through which the route passes, and features that have been planned and delivered as part of the route itself.

The links between active travel and physical health are well known. Routes that engage people emotionally also help to create psychological and social benefits. They should be places where people come together and feel connected to the wider community, reducing social isolation and improving mental health.

Residents near to the Lias Line, an active travel route along a disused railway line in Warwickshire, voted on who they believed had made a positive impact on their local community in the last seven decades. Laser-cut silhouette figures of David Moorcroft (Parkrun Chair and former Olympian) and Eileen Sheridan (British road cyclist) were installed at the junction with the former Long Itchington branch line.

Figure 11-1: Portrait benches on the Lias Line, Warwickshire.



Credit: Walk Wheel Cycle Trust.

11.3 Existing features

At the early stages of the planning process, it is important to consider the range of assets within the landscape and how access to or appreciation of them could be enhanced through the choice of route, as discussed in Chapter 3.

This could include taking the route close to a geological feature or passing through a location where a viewpoint exists. It could also be created through landscape management.

Primary research, specialist advice or local planning policy may be needed to help identify any such opportunities. Local communities can provide a key source of information about local points of interest, historical narratives and local context which could be integrated into a route's design.

Figure 11-1 shows how the location of key features can enhance the travel experience and increase the amenity of a route, which will ultimately attract more users. These features are typically located at path junctions, access points, particular points of interest, or where historic features can be seen or otherwise experienced.

Figure 11-2: Active travel routes sit within a rich landscape of natural and manmade features.



Making use of existing historic features

Where routes pass close to or enable a viewpoint of a significant heritage asset, the route design should maximise this opportunity for learning. Designers should consider using interpretation boards to provide relevant information about the feature. They can also provide connections between the route and these features with supporting wayfinding measures – see Chapter 12.

Points of interest are sometimes operated as a commercial enterprise where an entry fee is required, or are commercial facilities such as a café or restaurant. In these cases it is important to work with operators for shared benefits. This could include access improvements, the provision of destination cycle parking or discounts for those arriving by walking, wheeling or cycling – see Figure 11-3.

Figure 11-3: Signage directing users to the Keswick to Threlkeld Railway Trail.



Historical features can also play an important role in the delivery of routes. There are many examples of active travel routes incorporating historic features such as old railway lines and platforms, bridges, viaducts, tunnels, embankments and even sections of Roman roads. Many PRow follow historic paths related to former rural industries such as mining tramways and droves.

To bring historic structures back into use as part of a route, they may need structural work. Specialist heritage advice and specific consents are likely to be needed for this. Where routes have been unused or inaccessible for a long time, there may be additional ecological considerations in the planning of routes.

However, bringing these features into use may attract additional opportunities for grant funding, helping these features to be saved for future generations.

Routes through settlements

The settlements served by a route should be considered key features within the broader landscape. The planning and design of routes through towns and villages should incorporate features which support placemaking by enhancing the setting of key features.

Designers should engage with the local community to aid their understanding of a place. They should identify opportunities where intervention as part of a route's delivery could address local issues or help local goals. Opportunities for co-design are usually more significant within settlements than on the sections of route between them.

11.4 Features of the route

Introduction

This section describes typical features which can be introduced or enhanced through the design and delivery of routes. Practitioners should design features that are appropriate to their context.

This should include considerations regarding the social safety of potential route users. Where possible, features should reflect the local vernacular in terms of materials and construction.

Designers should consider the points where users can or will join or leave a route, including where they are changing modes.

The location of features should also consider environmental aspects such as weather exposure, noise and air pollution from roads and industrial processes, and closeness to private property where issues of overlooking and privacy might raise concerns.

Seating and shelter

Seats or perches can enhance paths and create more inclusive spaces. They can encourage more people to walk, wheel and cycle longer distances, adding comfort. They are particularly important for older people and those with mobility issues. Seating is more important in rural areas where resting options are limited.

ATE's Route Check Tool includes consideration of places to rest. It offers maximum points for rest areas that are located less than 50m apart, with a sliding scale offering no points for resting areas which are more than 150m apart. While this frequency might be appropriate and easy to deliver within urban areas, it can add significant cost to longer distance rural routes. Wider spacing will normally be appropriate for these routes, although this may have an impact on the accessibility of the route for some users.



Seating should be located to offer resting areas before and after challenging parts of a route. This includes features such as gradients, or external environmental impacts such as road noise, which can stress users physically or mentally. Putting seating at a point of interest or viewpoint is preferable, along with facilities such as bins, drinking fountains, information boards and tables. These facilities should be as accessible as possible.

Rest points should be located in areas that are sheltered from prevailing winds, or where a man-made shelter can be provided to protect from the weather. Designers should also consider the path of the sun, avoiding spots that receive little sunlight.

Figure 11-4: Resting place with a view over the North Yorkshire Moors.



Seating types should be inclusive, with different heights and styles for different needs.

Furniture design should be sensitive to and enhance the character of the route and surrounding landscape, and align with the route's branding or wayfinding strategy.

Providing a range of seating – such as benches, picnic tables and other social seating – can help make the route accessible to the widest range of users.

Natural features such as boulders and tree trunks could be used as the basis of informal seating, although additional seating may be needed for inclusivity.

Figure 11-5: Nested picnic bench in Shepton Mallet.



Seating and rest areas should not obstruct walking, wheeling and cycling routes but should be located near to the route. Designers should consider how people using the route access the rest areas, ensuring that the route between them is inclusive, and also ensuring that large groups do not obstruct the path or make it difficult for others to pass.

Further information on benches and resting points is provided within the [Planning for Active Places section](#) of ATE's website.

Toilets and Changing Places

The provision of sanitary facilities along or close to a route, such as toilets (including disabled and Changing Places toilets) and baby-changing facilities, can significantly help to improve the overall accessibility and attractiveness of the route to a range of users, including families, disabled users and women and girls. Disabled toilets should be large enough to accommodate large mobility scooters.

Gateway features

Gateway features provide an opportunity to invite users onto the route and create a sense of place and reinforce route identity. They should be designed to be welcoming, open and accessible.

Designing gateway features through engagement with local communities or working with local artists can help enhance the route and amenity of the area. The scale, materials and colours of gateways features should be considered carefully, as well as cost and maintenance requirements.

Art and culture in the landscape

Rural active travel routes are more attractive and interesting places if they incorporate artwork or art trails, including sculptures and interpretive features.

Figure 11-6: Ram sculpture in Nought Moor, Yorkshire Dales National Park.



Figure 11-7: Cycle sculpture in Nought Moor, Yorkshire Dales National Park.



Information and interpretation

Interpretation boards can convey information about the route or features in the area using text, maps, images, or diagrams. They can be used to tell a story about a place and give the route an identity, which can help to engage users.

In areas with limited mobile telephone reception, it can be challenging to access the internet to look up information about the area.

Areas with poor mobile reception can be used to guide the placement of such signs.

It's also worth noting that while many people will use phones to navigate and gather information about a route, designers should not rely on this and should consider providing information by other means and in accessible formats.

These boards might include local history, archaeology, architecture, ecology, or other points of interest. They could potentially have interactive features like tactile displays or audio. They should be placed at a height and location that is easily accessible to all users including wheelchair users and children.

Figure 11-9: York Community Woodland interpretation board.





Play on the way

Integrating play features into active travel routes makes them more appealing to children and families. They can transform routes into linear play spaces, boosting their fun and utility. Features should be designed for all users, regardless of their characteristics.

This can mean providing equipment and apparatus at key points along a route, or opportunities for people to climb or scramble over natural features.

Features for recreational cycling such as pump tracks (bumpy circuits for recreational riding) or trim trails can be provided next to routes if there is enough space, and can help to maximise the health benefits to users. Where these are provided, the interactions between path users and those using the features should be considered. Routes can also be planned to pass close to existing play areas, shelters and other facilities such as mountain bike tracks which may already sit within the landscape. Improving access to these facilities has the potential to increase their use.

Maintenance of any play features or equipment will need to be considered during the design phase.

Waste management

Litter is a major concern for many people. Landowners and local communities often raise litter as a concern when they oppose active travel schemes.

Rural active travel routes should include appropriate waste management systems that minimise litter and promote responsible disposal.

Bins (including those specifically for dog waste) should be placed strategically along routes, especially at high-traffic areas, amenities and potential litter hotspots. Bins should be clearly identifiable and accessible to all users and in keeping with the surrounding environment. They should be appealing and convenient to encourage use.

It is important that a management and maintenance strategy for bins is agreed. Engaging and collaborating with local authorities, community groups and local businesses can help to ensure that suitable waste management systems and strategies are implemented.

Monitoring equipment

There are benefits to providing counters on routes to monitor cycling and pedestrian usage. The data can be used to calculate benefit cost ratios, as discussed in Appendix C, and so help make the case for future investment.

Cycle parking

The vast majority of people cycling along the route will at some point become pedestrians, whether at the start or end of a route, or at a mid-point where they park their cycle, view or explore the landscape or visit local businesses and attractions.

While Sheffield Stands are a commonly used form of short stay on-street parking, there are alternative provisions that are more accessible. The quantity of spaces should be based on the anticipated number of people who may use the route. Designers should also make provision for non-standard cycles to enable a wider range of users to be able to park their cycles. ATE has produced a [Planning Advice Note on cycle parking](#). Secure and convenient cycle and mobility scooter parking should be provided at destinations.

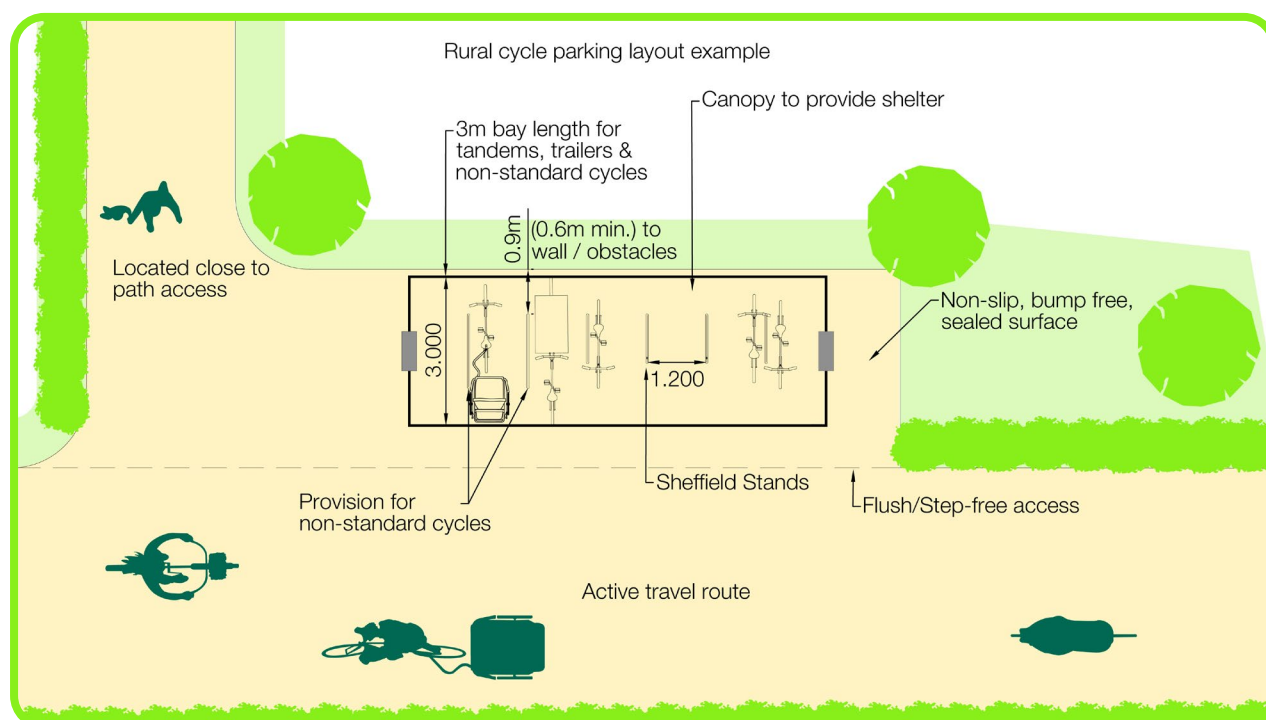
Figure 11-10: Rural cycle parking that fits in a rural setting but is not secure.



Cycle and mobility scooter parking should not obstruct the active travel route or any pedestrian paths. They should be located where people feel safe to leave their cycle at all times of day and night. Parking areas should be clearly marked, secure, overlooked, well maintained and well lit if appropriate.

Figure 11-11 shows an example of an inclusive cycle parking layout. For more information see Wheels for Wellbeing's [inclusive cycle parking guidance](#).

Figure 11-11: Typical cycle parking layout.



Examples of rural cycle parking can be seen in the images below.

Figure 11-12: Cycle parking integrated with planting beds, Falmouth Town Centre.



Figure 11-13: Cycle parking at Rufforth Park, York.



Supporting features such as toolkits and air pumps are useful additions to cycle parking, as they help meet cyclists' needs.

Mobility hubs

As advised in Section 2.4, active travel routes should be designed to integrate with public transport routes to improve their accessibility. Signage should highlight opportunities for people to leave the route to access bus stops.

When planning active travel routes, feasible locations for different types of mobility hub can be considered. [CoMo UK provides guidance](#) on what features are needed or desirable for mobility hubs in small market towns, villages and at tourism hubs. Designers should aim to meet the highest standard in terms of provision.

Bus stops and services

Bus stops should ideally be provided with seating, shelter and cycle parking facilities in order to cater to as many bus users as possible.

Buses that can accommodate cycles and mobility scooters should be considered so that people can access routes directly by bus. For example, in the Lake District in the summer months the 800 bike bus service can carry 12 bikes on a route linking key destinations in the Windermere area.

Railway stations and services

Integrating active travel routes with rural rail stations creates opportunities for visitors to access the countryside from far afield without reliance on private transport. It also helps rural communities access jobs and employment in larger settlements – see the example in Section 2.4.

Visitors who wish to bring their own cycles will need suitable storage space on trains. Local authorities should engage with rail operators to encourage them to provide this space on trains.

Cycle parking at stations is essential to enable the start and end of rail journeys from rural areas to be undertaken by cycle. Cycle hubs, where cycle parking is provided in greater numbers, will be appropriate at busier rural stations – see LTN 1/20.

Cycle and mobility scooter hire

Staffed or automated cycle and mobility scooter hire provision along a route, or as part of an area-wide shared mobility scheme, can further increase use of rural active travel routes.

The availability of e-cycles can attract users that otherwise would not hire a cycle. They provide a way into cycling by reducing physical demands, opening up routes that may be too hilly or uneven.

Figure: 11-14: Cycle hire unit.



Car parking

When delivering new or improved rural active travel schemes, while there should be a focus on reducing private vehicle trips, it is also important to consider people who may want or need to access these routes by car.

Providing car parking is particularly important where an active travel route may open up opportunities for ‘park and ride’ or ‘park and stride’ journeys, where the last leg of the journey is undertaken by walking, wheeling or cycling. Car parking at the edge of towns and villages with attractive and convenient active routes to the centre could help to address tourist vehicle congestion or provide safe drop-off places from which children can walk, wheel or cycle to school.

Providing car parking along a route will also be important where the route is a destination in its own right. Unless this activity is planned for and provided for, car parking demand can result in inappropriate parking which can damage verges and obstruct narrow country lanes, or overspill into nearby settlements. Some users will bring their own cycles or mobility scooters or look to hire them at the start of the route and will need somewhere convenient to park their cars. Scheme designers should consider the potential need for the incorporation of disabled parking bays with space for off-loading mobility devices at access locations.

Green and blue infrastructure

Incorporating green and blue infrastructure features along active travel routes offers numerous environmental benefits, including improved air quality, reduced noise pollution and flooding and increased biodiversity, as well as boosting attractiveness and comfort. This applies both to the provision of new features and also enhancing and celebrating existing green and blue infrastructure. The [ATE website](#) gives information on what green and blue infrastructure is and how it can be used.

Planting

Trees and planting make a route feel more welcoming and inviting, which can ultimately encourage more people to walk, wheel and cycle.

Well-designed planting and landscaping can create pleasant places as well as provide shelter from poor weather conditions. It can also reduce flooding and support local biodiversity by creating habitats for wildlife.

As such, design of all active travel routes should include planting. This should include the retention and management of existing plants and trees, management of invasive species as well as the introduction of new native and locally appropriate plants.

New trees or shrubs should be carefully selected and placed so they will not encroach on paths or sight lines, including for people on low recumbent cycles or mobility scooters and do not make a space feel less safe.

Low overhanging branches and leaves can be hazardous for all users, but particularly to blind or partially sighted people. Minimum headroom values are given in Chapter 5.

Well-maintained verges alongside routes should be provided where possible as they can serve multiple purposes and provide many benefits. They can provide a safe buffer between pedestrians, cyclists and traffic, improving visibility and contributing to the overall aesthetic of the route – see Section 6.3.

Verges can provide valuable wildlife corridors and habitats, contributing to local biodiversity. They can be used for drainage by managing surface water runoff and reducing the risk of flooding. A well-designed and maintained verge can also help to minimise encroachment from vegetation onto the path.

Figure 11-15: Wide verges and retained hedgerows allow for wildflower planting along the Camel Trail as it passes Bodmin Jail.



Street trees will need regular maintenance, including pruning and watering. Appropriate species should be selected that are suitable for the streetscape, local climate and soil conditions. Root barriers and tree root management should be considered at the design stage.

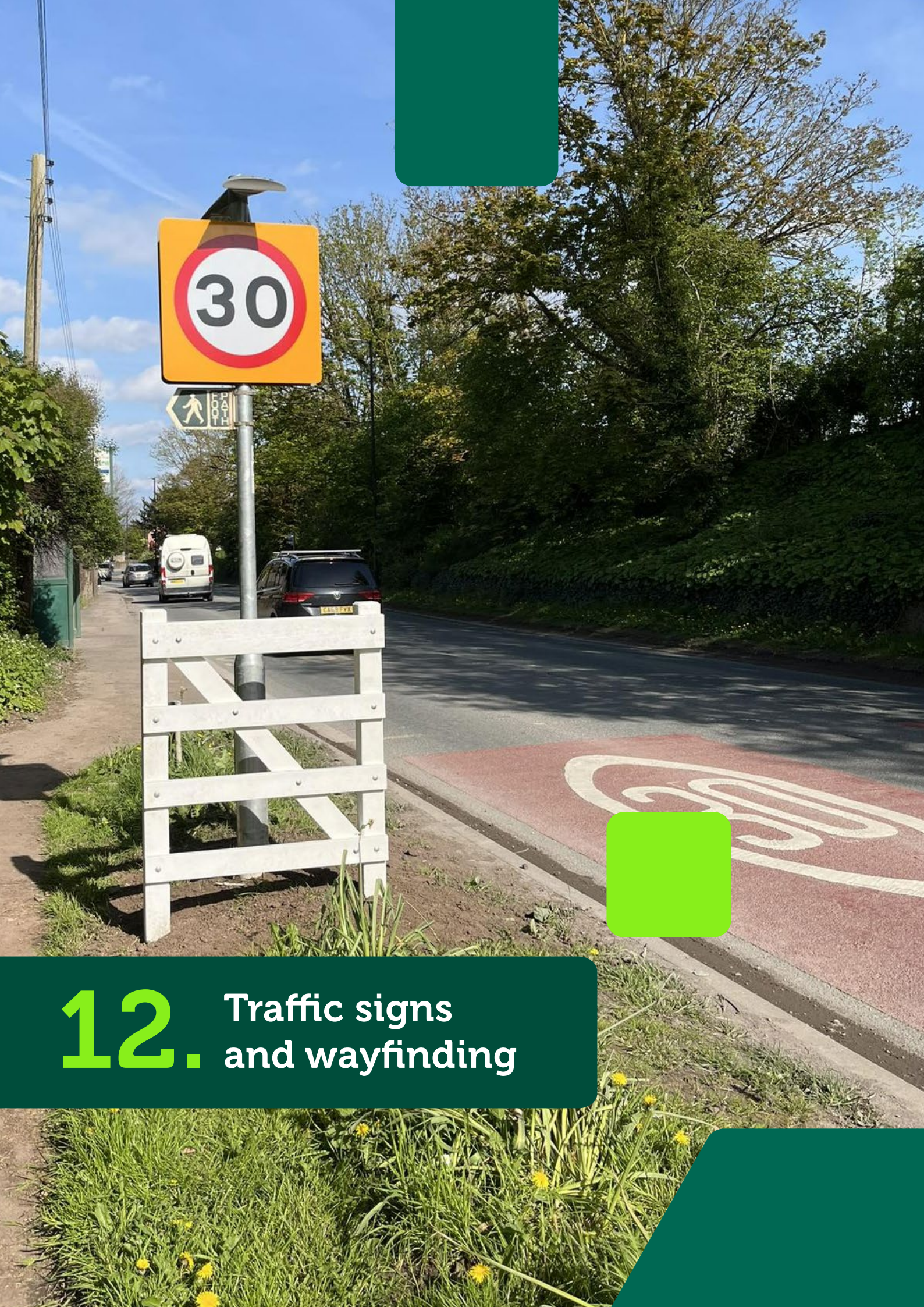
Planting schemes must be well designed, installed and maintained to ensure the investment delivers long-term value and that routes remain accessible. All planting and landscaping should be carefully considered and site specific. Designers should comply with advice from a suitably qualified ecologist or landscape architect.

Blue infrastructure

Blue infrastructure refers to waterways and other natural drainage features that carry surface water and improve the environmental aspects of a route.

Blue infrastructure also helps to make routes more attractive, benefitting people and biodiversity. Incorporating features such as rain gardens, ponds, swales and wetlands can provide nature-based solutions to drainage and many other environmental benefits. If routes follow the edge of water bodies, there may be opportunities to improve or restore habitats.





12. Traffic signs and wayfinding

12.1 Chapter summary

This chapter deals with the provision of information on the use of active travel facilities in rural areas. Part A describes traffic signs and road markings commonly needed to support new and improved rural routes on highways. It is important to ensure that these are appropriate to the local character and context, do not add unnecessary clutter, and provide clear information to users.

Part B covers wayfinding (on and off carriageway), which uses a combination of natural and man-made landmarks, physical waymarking (signs and markings), traditional navigation techniques and more modern digital tools such as GPS-supported apps and websites.

Part A: Traffic signs and road markings

12.2 Traffic signs and road markings

Signing and markings located within the public highway must comply with TSRGD. These regulations prescribe the size, colour, character and meaning of signs and markings, and set out usage conditions such as permitted combinations, to ensure consistency across the country.

It is important to find a balance between providing sufficient signing and preserving the rural character of a place. A 'less is more' approach is a good place to start when designing schemes for traffic signs and road markings as part of a route or a traffic management scheme. TSM provides guidance applicable to all areas, and gives good practice advice on the use of prescribed traffic signs and road markings within the public highway, including on sign positioning and mounting heights.

Traffic sign clutter tends to accumulate over time where additional signing, such as that associated with a new active travel network, is introduced without considering existing signing.

Excessive signing and road markings on roads can overload users with information which they may not be able to properly process, and which may be ignored. Restraint in application can therefore help to draw attention to any signs or guidance provided, helping to emphasise the messages that are being conveyed. Similarly, yellow backing boards should not be used unless there is a particular concern that the sign may not stand out, as they may lead to people missing the most important sign.

The omission of some signs and markings can impact on driver behaviour and increase their focus on the surrounding environment. An example of this is the removal of centre line markings which research undertaken by TfL in a 2014 trial has shown can reduce speeds by up to 8.6mph in urban environments. There is no comparable rural research, but the approach may have application in certain rural settings. On rural roads with carriageway widths below 5.5m centre line markings should not be provided, but they can be omitted on wider roads once an assessment of the likely impact on road safety is made.

Healthy Streets for Surrey – Local Example

Surrey County Council's highway design code provides guidance on the use of road markings, stating:

"In general, road markings create unnecessary visual clutter on the road and are intrusive, particularly in rural settings."

On the application of centreline markings, the design code notes:

"Centre line markings should be omitted from carriageways of 6.5m wide or less, or where the design speed is 30mph or under. On rural roads, up to the national speed limit, the centre line should be removed in conjunction with the use of edge of carriageway markings. This helps to create a rural feel, a less vehicle dominated environment, and perceived reduction in road width and thus vehicle speeds."

Section 65 of the [Road Traffic Regulation Act 1984](#) (RTRA 1984) gives local traffic authorities powers to 'cause or permit' traffic signs and other equipment to be placed on the highway as part of their duties to manage their road networks.

Parish or community councils have powers to place traffic signs. Under Section 72 of the RTRA 1984, a parish or community council can provide, or wholly or partially fund, traffic signs within the public highway if they have prior consent from the traffic authority.

Section 72 of the RTRA 1984 also allows a parish or community council to place or fund objects/devices (but not traffic signs) on or near footpaths and bridleways. In all cases permission is required from the landowner and/or the highway authority. There are restrictions on the purpose of signs provided via Section 72 – they can only be used to indicate:

- a stopping place for public service vehicles
- a warning of the existence of any danger
- the name of the parish or community or of any place in it



12.3 Signing mixed traffic environments

Signs to diagram 967 are used to identify routes recommended for pedal cycles on carriageway, including in mixed traffic conditions. These are often used with road markings to TSRGD diagram 1057 to help inform riders and to highlight the presence of cyclists to other road users.

Figure 12-1: Road marking to diagram 1057 and traffic sign to diagram 967.



These signs should be used on designated active travel routes where Table 4-3 suggests that conditions are appropriate for cyclists to be accommodated in mixed traffic within the carriageway.

Carriageway markings to diagram 1057 can give regular subtle reminders to drivers about the potential presence of cyclists, minimising the need for vertical signs.

Figure 12-2: Use of cycle symbols on the carriageway of a lane.



However, in environments where all users can safely and comfortably walk, wheel, ride or cycle in the carriageway of a quiet country lane, there are no prescribed road markings to the presence of multiple types of users not in motor vehicles.

Warning signs to diagrams 554 and 550.1 can be used to warn drivers of the presence of people walking and horse riders in the road ahead – see Figure 12-3. A ‘Share space’ sign to diagram 886 (Figure 12-4) could be used, although this does not reflect use by equestrians.

Figure 12-3: Signs warning of pedestrians and horses in the road ahead.



Figure 12-4: Sign to diagram 886 – road ahead where motorists, cyclists and pedestrians should expect to share the same space.



On narrow country lanes, drivers can be informed of the availability of passing places to pass people walking, wheeling and cycling.

12.4 Designated Quiet Lanes

Quiet Lanes are a useful way of indicating to all users that a quiet country lane is a shared movement route used by people walking, wheeling, cycling and horse riding or carriage driving, as well as by motor vehicles. Drivers should take particular care when using these routes. Further guidance on Quiet Lanes is in [Traffic Advisory Leaflet 03/04](#).

'Quiet Lane' is a legal designation under the [Transport Act 2000](#), applied by local authorities following the process set out in the [Quiet Lanes and Homes Zones \(England\) Regulations 2006](#). Designation is made through a simple resolution of the traffic authority – no TRO is required.

While the process needs to be followed on a road-by-road basis, the intention should be to create a coherent network of routes suitable for walking, wheeling and cycling.

To be effective, the introduction of a Quiet Lane scheme should involve three key elements:

- community involvement to encourage a change in user behaviour and to promote the benefits of the scheme
- area-wide direction signing to direct traffic along more suitable routes and to minimise through traffic
- Quiet Lane signs to diagrams 884 and 885 to inform drivers when they are entering or exiting a quiet lane

Quiet Lane designation does not in itself change the speed limit or permitted uses of the road, and the associated sign is not widely recognised. How far they positively influence road user behaviour will therefore depend on local community involvement while creating the network of routes.

Figure 12-5: Two variations of diagrams 884 showing the start of a Quiet Lane and diagram 885 showing the end of a Quiet Lane.



Quiet Lane designation is typically applied to minor roads in rural areas, typically C or unclassified roads. Chapter 4 of this guidance recommends that where pedestrians and cyclists share space with motor vehicles, traffic speeds and volumes should be in line with Table 4-3, meaning vehicle speeds around 20mph and with very light traffic flows would be the most suitable.

The Quiet Lanes and Home Zones (England) Regulations 2006 legislation allow for optional speed orders and use orders in addition to designation. Speed orders enable the traffic authority to set a specified speed which the design of the Quiet Lane seeks to achieve. However, a speed order does not impose a speed limit, nor is it signed. Use orders permit the road to be used for other purposes besides passage.

Speed orders allow highway authorities to:

- specify the classes of vehicles targeted by the order
- describe the measures that will be taken to constrain the speed of a class of vehicles
- specify the speed below which it is intended to limit the speed of specified vehicles

Proposals for designation, speed orders and use orders must be formally consulted on, including occupiers and organisations likely to be affected, both positively and negatively. Where objections are received, they must be considered by the highway authority. However, there is no requirement for a public inquiry prior to designation or creation of the speed or use order.



Although they are not necessary as part of a Quiet Lane scheme, it may be desirable that highway authorities introduce a local speed limit on unlit Quiet Lanes. As set out in Chapter 7, 20mph is the advised speed of traffic on routes that form part of the designated active travel network. This will enable most people to share lanes safely and comfortably with mixed traffic when vehicle numbers are low. The speed limit does not need to match the speed specified in the speed order.

Figure 12-6: Designated Quiet Lane, Bentham, Forest of Bowland.



Chapter 7 provides guidance on measures to reduce traffic speeds and volumes on all quiet country lanes, which should be applied to designated Quiet Lane schemes.

12.5 Regulatory signs

Regulatory signs communicate a prohibition, restriction or requirement, including speed limits. They must comply with TSRGD, and guidance is given in TSM Chapter 3.

Speed limits

If necessary, 20mph speed restrictions can be delivered through 20mph limits or 20mph zones. A 20mph limit requires the use of upright signs only, whereas a 20mph zone requires at least one physical feature such as a road hump, rumble strips or chicane. Permitted physical features are prescribed in Schedule 10 of TSRGD. 20mph repeater signs may be used as a feature as well.

Within 20mph zones there is no requirement to light road humps. However, in rural contexts, horizontal deflections and other measures are generally recommended – see Chapter 7.

Local traffic authorities have a duty under the RTRA 1984 to ensure speed limits are adequately signed so that drivers are in no doubt about the limit in place at any time. While there is no specific requirement to provide repeater signs, it is for the traffic authority to determine how many are required and where they are placed. Speed limit signing should be in line with the advice given in Chapter 3 of TSM, which advises that repeaters for 20mph and 30mph limits should be placed at a maximum distance of 200m apart.

Repeaters may be upright signs to diagram 670 or road markings to diagram 1065 – see Figure 12-7.

Figure 12-7: Speed limit signs: upright sign to diagram 670 and road sign to diagram 1065.



Roundels may be particularly beneficial on roads with constrained highway widths or which are bordered by walls, hedges and buildings. They can be less visually intrusive than upright signs but will require more regular maintenance.

Waiting and loading restrictions

There may be a need to control waiting and loading activity in certain rural locations through a TRO. Appropriate signs and road markings, such as yellow lines and kerb blips, will be required to give effect to the restriction. Detailed guidance on the design and placement of regulatory signs and markings is given in TSM Chapter 3. In areas regarded as environmentally sensitive, narrower (50mm) wide yellow lines may be used to control waiting. Alternative shades of yellow can also be adopted to minimise the visual impact of waiting restrictions (see TSM Chapter 5). Traffic authorities are able to consider any street environmentally sensitive.

A restricted parking zone restricts parking to signed bays only within the zone, and does not require yellow line markings. This makes them an option for historic areas or where very narrow roads mean yellow lines and signing required for other forms of parking restriction would be visually intrusive or impractical. They can be useful where road surfaces are not conducive to the application of yellow line markings, such as along cobbled streets.

Advice on signing restricted parking zones is given in Chapter 3 of TSM.

Restricted parking zones require signing on the entry and exit points, with repeater signs in locations where people may consider parking.

Routes for walking, wheeling, cycling and equestrians

Where shared use paths need to be signed, traffic sign 956.1 in TSRGD should be used where the route is for the use of pedestrians, cyclists and horse riders. If the route is for the use of pedestrians and cyclists only then sign 956 should be used.

Figure 12-8: Sign 956.1 – Route for use by pedal cycles, equestrians and pedestrians only.



Figure 12-9: Sign 956 – Route for use by pedal cycles and pedestrians only.

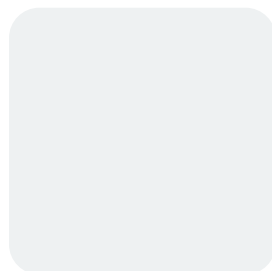


If the route to be signed is to be used only by pedestrians, cyclists, horse riders and non-mechanically propelled vehicles such as horse-drawn vehicles, sign 956.2 should be used.

Figure 12-10: Sign 956.2 – Route for use by horse-drawn vehicles, pedal cycles, equestrians and pedestrians only.



Signs 956, 956.1 and 956.2 should not be used where landowners or others have the right to drive motor vehicles along the route.



12.6 Warning signs

Warning signs are used to alert drivers and other road users to potential dangers ahead and where they might need to proceed with caution.

These signs can highlight potential conflict points, such as at pedestrian or cycle crossings and other places where drivers may expect to encounter pedestrians, cyclists and horse riders in the carriageway ahead – see Section 12.9.

Warning signs can inform users of restrictions (height, weight or width) ahead and features that may not be suitable for their abilities. These might include a ford, a level crossing or an uneven road, all of which could be challenging for some people walking, wheeling or cycling.

Figure 12-11: Diagram 950 – Cycle route ahead.



Where active travel routes cross roads at informal crossing points, a sign to diagram 950 should be used in connection with a plate stating 'Cycles crossing'.

Figure 12-12: Signs warning of frail or disabled pedestrians (diagram 544.2) and children (diagram 545) crossing ahead.



In specific locations, signs to diagram 544.2 or 545 may be used to indicate that frail or disabled pedestrians are likely to cross a road ahead (such as near a care home or day centre) or that drivers should expect children travelling to or from school or a playground ahead – see Figure 12-12.

Figure 12-13: Diagram 562 warns of a specific danger ahead (note: May be used only in combination with a supplementary plate. Example illustrated below).



Where pedestrians cross at informal crossings, the sign to diagram 562 indicating a specific danger ahead can be used in connection with a plate stating 'Pedestrians crossing'. This sign may only be used with a plate that names the danger specifically – the permitted variants are listed in TSRGD schedule 2 part 2 item 56 – to provide clarity to road users on the nature of the danger.

12.7 Path edge markings

On traffic-free routes, users may benefit from surface markings along the path edge, particularly along routes that are unlit some or all of the time.

A clear white band (no wider than 100mm) placed along the edges of a route can help to prevent users from running off the edge and may be particularly beneficial to some users with vision or other neurological impairments, which may reduce peripheral vision or contrast sensitivity.

These markings should be placed no more than 250mm from the path edge on traffic-free routes. On shared routes beside a carriageway, this should be increased to reflect the desirable buffer width distances given in LTN 1/20 Table 6-1.

Vehicle-activated signs

Dynamic warning signs may be used that can be triggered by motor vehicles and path users, warning other road users of activity ahead.

Vehicle-activated signs (VAS), triggered by an approaching motor vehicle, have been developed to help address the problem of inappropriate speed. They must not be used as an alternative to standard static signing of speed limits, but as an additional measure to warn drivers of a potential hazard or to remind them of the speed limit. VAS have been shown to be effective in rural areas, including at the approaches to junctions and bends – see [DfT Traffic Advisory Leaflet 1/03 Vehicle Activated Signs](#) for further guidance.

Where traffic-free active travel routes intersect with mixed traffic streets and lanes, the use of activated signs displaying information can be used to raise drivers' awareness of route users approaching to either cross or join the trafficked route.

Path edge markings should not be applied as intermittent or dashed lines along routes, except for short lengths where vehicles or other users may legitimately cross edge markings either moving across a route or to join and leave it.

Edge markings can also be used to warn users of areas with limited headroom, or where vertical elements adjacent to a path may interfere with a user's dynamic envelope (such as a potential clash between railings and a cyclist's handlebars).

As with other markings in rural areas, limited use in application will help to minimise the visual impact of routes. Along linear paths markings may not need to be continuous, but where routes turn suddenly or frequently, edge markings can help users to read the route ahead.

12.8 Gateways

Gateways are a useful traffic management feature which show where the character of a road or street changes. This, for example, could be where an active travel route joins a village street near a school and so an environment of more people walking, wheeling and cycling in the carriageway should be expected. Gateways can also form an important element in a wayfinding network, giving people information about where they are and reflecting local distinctiveness and heritage – see Table 12-1.

Gateways should be located to reflect a transition from open countryside to more enclosed settlements, where walking and wheeling is more likely to be encountered as well as at an entrance to a network of quiet country lanes designed primarily for walking, wheeling and cycling. Gateways can also reflect the point at which people cross geographic boundaries, or the transition into national parks or otherwise protected landscape.

[LTN 1/07 on Traffic Calming](#) notes: *“Studies have shown that minor gateway treatments achieved 85th percentile speed reductions of generally below 3mph at the gateways. With more significant treatments at gateways, speed reductions of 6–7mph were attained. Where major gateways relying on more physically restrictive treatments were installed, reductions in 85th percentile speeds were up to 10mph in some cases.”*

Without additional measures between gateway features, the impact of gateways on their own is likely to be 1–2mph through a settlement. Gateway treatments need to be supported with a wider range of measures along a route to maintain lower speeds – see Chapter 7.

Where the speed limit commences at the village boundary, the village nameplate sign (prescribed in diagram 2402.1 of TSRGD 2016) and speed limit roundel may be mounted together. The combined sign should be located at the point where the speed limit starts. It helps if drivers can see the start of the built-up area (for example, houses) at the same time as the signs, reinforcing the visual message that a reduced speed is appropriate.

If there are high approach speeds to a village, or the start of the village is not obvious, village gateway treatments can also be an effective way to slow drivers down. This includes through the use of short sections of transition speed limits which step down from higher speed limits, for example 60mph to 20mph via an intermediate section of 40mph speed limit. Further advice can be found in LTN 1/07 Traffic Calming, and Traffic Advisory Leaflets [01/94 VI SP – A Summary](#) and [01/04 Village Speed Limits](#).

As elements in a wayfinding strategy, gateway treatments can also be applied to active travel routes away from the highway, with signing informing users that they have entered or left a place or specific geography.



Table 12-1: Gateway examples.Visual narrowing of gateway
to 20mph areaGateway with signing with ties to
local area

Visual gateway at speed limit change



Village sign with imagery

Utilising infrastructure to make
statement gateway

Market street gateway with modal filter

Narrowing of gateway with kerbs
and road colouringGateway with vertical and
horizontal deflectionPlacemaking gateway with
historic elements

Village sign with imagery



12.9 Detailed design of signs and markings in rural areas

The introduction of lower speed limits such as a 20mph speed limit can help to reduce the size of signs needed, minimising the impact of signs and road markings in rural environments.

There is flexibility in the height at which signs can be mounted. The bottom edge of a sign can be as low as 900mm above the adjacent carriageway, which will help to reduce their visual impact. Signs aimed solely at cyclists may be more helpful mounted at eye level. Care should be taken to ensure signs can be seen from a sufficient distance and that there is no conflict with people walking, wheeling and cycling. TSM Chapter 1 recommends 2.1m as the minimum clearance for a sign over a footway, 2.3m over cycle tracks and shared-use paths, and 2.7m over equestrian routes.

Where signs are erected along active travel routes, care should be taken to ensure posts and other supporting structures do not limit the available width below the values given in Chapter 5 of LTN 1/20 and this document.

Figure 12-14: Direction signing supported on cantilever sign post mounted at the back edge of a shared path.



Where wide signs are required along active travel routes, the use of cantilever arrangements can help ensure this and reduce potential user conflicts and the likelihood of passing vehicles striking signs and supporting structures.

To minimise clutter and obstacles within narrow footways, opportunities for mounting signs on existing poles, suitable street furniture, walls or on structures should be considered with the owner's permission and necessary legal agreements in place. Further guidance on reducing sign clutter is given in Chapter 1 of TSM.

In rural areas, including in conservation areas or near listed or historic buildings, it may be necessary to adopt suitable colours and/or materials on signposts and sign backs. There may also be a requirement to consider the colour (and need for) any carriageway markings in these contexts. Designers should refer to TSRGD general directions 8 and 9 on mounting and backing of upright signs, and ensure signs also comply with BS EN 12899.

When placing signs, likely growth of vegetation should be considered, along with the impact that seasonal changes in foliage may have on sightlines. Careful design can minimise the need for regular maintenance such as the cutting back of vegetation. The impact of fallen leaves on carriageway markings should also be considered.

12.10 Lighting of signs

The requirements for the illumination of signs are set out in TSRGD. Regulation 8 introduces a default lighting position requiring all upright signs to be reflectorised or illuminated throughout the hours of darkness by internal or external lighting. This default position applies to all traffic signs except where specifically stated within the regulations.

Reflectorised signs are likely to be preferable to illuminated signs in rural areas, as these are less expensive to install and maintain, particularly in areas with limited infrastructure.

In most cases where signs are placed on roads in a location which is more than 50m from any streetlight, there is generally no requirement for these signs to be lit. It may be sufficient to incorporate reflectorised surfacing to make signs more visible during the hours of darkness.

Where signs need to be illuminated, the use of solar- or wind-powered lighting can simplify installation and minimise running costs. However, the power requirements must be carefully considered, particularly during long winter nights. The siting of signs needs to be within open areas avoiding shade and shelter created by trees, buildings and other structures.



Part B: Wayfinding

12.11 Importance of wayfinding in rural settings

Rural active travel wayfinding is essential for ensuring safe, accessible, and enjoyable active travel experiences. Rural environments have fewer landmarks and other incidental navigational aids than urban areas, and feature varied terrain, making it easier for users to become disoriented.

Along linear traffic-free routes across open countryside, a well-designed and constructed path on its own may provide sufficient guidance to allow regular users to navigate along a section of route. However, the landscape through which people travel changes across the seasons with vegetation changing or obscuring views and routes in summer months, and fallen leaves, mud and snow obscuring routes in the autumn and winter.

The provision of consistent and accessible information as part of a rural route therefore plays a significant role in the removal of barriers to active travel, making routes more attractive and inclusive for a wider range of users by improving comfort and safety.

Well-designed wayfinding improves route predictability, helping both locals and visitors confidently navigate between and within settlements. As such it can play a crucial role in rural tourism, directing visitors to scenic trails, heritage sites and local businesses. It can also enhance safety by guiding users away from high-speed roads and towards safer, designated routes, and increase the perception of safety for groups such as women and girls.

12.12 Principles for rural active travel wayfinding

In planning wayfinding for the rural context, there are six core principles that should guide decision making:

Figure 12-15: Wayfinding principles.



By following these principles, designers can ensure that they offer the right information in the right location, presented, where possible, in an accessible format (including via, for example, apps and tactile signs) which is appropriate to the rural context.

Inclusivity and accessibility

Wayfinding features need to cater for all users. Designers need to consider the specific requirements of different users related to their age, their mode of travel and any physical, neurological, sensory or other disabilities throughout the planning, design and deployment of wayfinding.

This should be considered in line with the expected range of users using the route (for example, if it links to schools or local tourism sites.)

Signing needs to be appropriately located and legible for this full range of users. Legibility relates to the choice of fonts, the colour and contrast of text and backgrounds and the size of text. Inclusive Mobility provides guidance on all of these aspects of inclusive signing design. On-highway signs must comply with TSRGD, whereas off highway there is more flexibility, but it is preferable for them to conform as well to provide consistency.

Consistency and predictability

Adding routes to the rural active travel network presents an opportunity to review, rationalise and improve existing wayfinding provision, removing duplication, filling gaps and improving legibility, particularly where schemes incorporate several existing routes.

Consistency in the provision of wayfinding features, including in the use of materials, names, route coding and branding, will give users greater confidence to travel across the network and to explore places more widely.

Wayfinding elements should be placed at logical points (often best identified by travelling the route) within the network, with repeated elements appropriately spaced along linear routes.

Consistent waymarking confirms to users that they have a right to walk, wheel, cycle or ride a horse in an area and can remind them about general route etiquette or specific rules in place.

Safety and behavioural

Wayfinding can communicate key information to promote the safe use of routes including appropriate warnings and guidance around potential hazards or challenges. Such behavioural messages should not be given on highway through signs, but information can be passed through other forms.

The comfort and confidence of users can be enhanced through providing information in such a way, to educate and remind users of appropriate behaviour. These measures can make routes more inviting and improve the travel experience, which may lead to greater uptake.

High-quality and consistent wayfinding can also significantly enhance feelings of safety for women, girls and other marginalised groups.

Environmental sensitivity

The overuse of signing and markings may have an urbanising effect and detract from the rural aesthetic of routes. For rural routes within the public highway, schemes must follow the requirements of TSRGD. For motor-traffic free routes, it is important to provide sufficient signing to ensure that a route is coherent and safe without significantly impacting on its character.

Wayfinding elements should be durable and resilient in their manufacture and installation. This means being resilient to weather extremes (heat, cold, wind, rain, UV) and damage through vandalism or collision. Elements should be cost-effectively maintained to maximise the length of time before replacement.

Materials used to manufacture and install wayfinding features should ideally be sustainable, recycled and/or recyclable, and incorporate locally sourced materials where possible. Consideration should be given to the potential impacts of materials upon natural habitats and ecosystems when in place.

Local character

Features introduced to achieve wayfinding should be grounded in the local context, reflecting local distinctiveness and complementing the vernacular of rural settlements (see Figure 12-16 below):

Figure 12-16: The use of consistent materials aids wayfinding in the historic centre of Hereford.



It will be useful to engage with local communities to help understand and engrain local character in any wayfinding elements or design. This could include opportunities to reflect the heritage of a place and its people, and the special features of the landscape it sits within. There may also be an opportunity for local people to support the creation of a route's identity or brand, including through naming routes, especially where a route has the potential to become a destination in its own right, attracting visitors and tourists from much further afield to an area.



Integration

Wayfinding should consider how routes integrate with existing transport networks, including the highway network, public rights of way, public transport networks, waterways and national walking and cycling routes, including the NCN and National Trails.

Such integration could include incorporating the requirements of local landowner or relevant network operator signage and brand styling (for example, the Canal & River Trust or Walk Wheel Cycle Trust) into any wayfinding information.

This includes information about where users can change modes and any facilities provided to support users when doing so, such as cycle parking.

Wayfinding should also clearly integrate routes with existing settlements and places of interest. This can include key businesses, tourist amenities and visitor attractions that are accessible from the route, although it will not be possible to provide signing to all locations.

12.13 Placement of wayfinding features

The placement of wayfinding features needs to consider how users approach and interact with them. If information will be read by users approaching from multiple directions, the wayfinding feature should be placed parallel to the direction of travel. Users may need to stop and turn to read the information.

Where a significant amount of information is presented and users may pause to read or plan the next steps in their journey, suitably surfaced and sized space should be provided to ensure that people can stop without blocking other users.

Wayfinding features need to be designed and placed so that they do not become an obstacle, particularly to users with vision impairments.

Large wayfinding signs, in particular slab and monolith forms, can also feel unsafe because of the potential for concealment behind them. The location of wayfinding features should take into account any interpretation and information boards, public art or other features such as seating, benches and repair stands. It is important to coordinate these features to prevent clutter.

Information is most commonly needed at decision points within a network. These include the start and end of a route, intersections, and diversions. On longer routes decision points can reassure users, providing them with confidence to continue their journey.

Figure 12-17: Comprehensive signing of active travel routes at a decision point on the NCN.



Decision points across the network should be categorised, with different and specific types of information presented at each:

- **welcome points** – these are typically entry points to a route or network. These are found around the periphery of the network but may also be located at points of interchange such as railway stations and car parks. They typically incorporate map-based signs and directional signing that provide an overview of the network. They help people build a mental map, plan onward travel, and understand local connections
- **major decision points** – located at intersections of primary and secondary routes, these points feature local area maps to help users plan their next steps and find key destinations. The information provided may also highlight hazards, obstacles, gradients, amenities, toilets, and resting areas to support inclusive use of the movement network

- **minor decision points** – found at intersections of secondary and tertiary routes, these points feature directional signs guiding people between destinations and to primary routes
- **arrival points** – these mark the entrance to a place or destination with clear signing identifying its name
- **confirmation points** – these are placed along long or irregular route sections where other wayfinding signs are absent. These provide reassurance and onward route information. They may include direction signing or route markers
- **education points** – located at sites of interest, these signs provide enriching information about heritage, nature, geography, or other topics. These could also provide information related to a route's accessibility, the types of user permitted to use it and guidance around user etiquette

At each decision point, users need information to orient themselves, plan their journey, locate a destination, or engage with their surroundings. Many decision points will serve multiple functions, such as a welcome point also acting as a major decision point, so signs can often include a combination of maps, directional details, addresses, and indexes.

Advanced warning of key decision points and intersections can help users to be aware of potential conflicts and adjust their speed. This could be provided through the introduction of vertical measures such as totems, flags and signs or surface level interventions such as surface dressing, surface markings, colourful murals or brand marks.

Figure 12-18: Surface dressing, carriageway markings and signing combine at the transition between traffic-free and mixed traffic sections, providing advanced warning to route users and drivers.



A balance needs to be struck between the provision of waymarking features and avoiding clutter in rural landscapes. Where routes wind through the landscape with limited visibility of the route ahead, more frequent provision may be required to give users confidence they are on the right path. Where routes follow linear features such as railway lines, green lanes and canal towpaths, it may be appropriate to only provide wayfinding features at entry/exit points.

Rationalise provision

Sign clutter often grows over time, where additional signing, such as that associated with a new active travel route, is introduced without considering existing signing. All schemes should include a review of existing signs along and in the vicinity of a route to determine if these can be removed or co-located with any new signs being proposed.

Excessive signing along routes and roads can overload users with information which they may not be able to properly process, and which may be ignored. As noted in *Manual for Streets*: “*When new highways are built or improvements are carried out, designers may over-provide and over-specify traffic signs, markings and other street furniture, based on the principle that they will only have one opportunity to provide such items. This practice adds unnecessarily to street clutter and should be avoided. Instead, the starting point should be that they are not to be provided unless there is a clear need for them.*”

This applies equally to wayfinding and traffic management schemes. TSM Chapter 1 also covers reducing sign clutter.

Wayfinding elements

The approach to wayfinding should incorporate a consistent range of street furniture and sign typologies so that information is presented consistently. Networks may incorporate:

- fingerposts
- nameplates
- directional panels
- directional maps
- totems (information/maps)
- waymarks
- surface markings

These features should be designed or selected to be robust and resilient to environmental impacts, wear and tear and accidental or deliberate damage. Supports should be of a design and material that is in keeping with the surrounding environment. Fixings should be tight enough and of an appropriate design to stop signs slipping or twisting around, or being deliberately rotated to give incorrect information.



Table 12-2: Some typical wayfinding features.

Street name totem



Historic way markers



Orientation totem



Fingerpost



Finger slat (furniture mounted)



Trail marker bollard



Trail marker (map-style sign)



Trail marker and footpath marker



Placename sign with trail marker



12.14 Design of wayfinding elements and route signing

While there are prescribed signs for on-highway pedestrian and cycle routes in TSRGD, including the NCN, there is no prescribed system for wider wayfinding elements. Local areas may have their own systems in place in addition to any NCN signing.

TSRGD signing can also be used for off-highway routes and should be considered where it will provide a consistent approach for users.

LTN 1/20 sets out guidance on cycle route signing, including information on sign positioning and mounting heights.

Information design

It is important to consider what information is being provided to users and how it is conveyed, as different users have different needs regarding information about travel distances, route conditions, gradients, access restrictions and hazards and information placement. The information given should help users to understand a route and plan their journey with respect to any mobility or access requirements they may have.

Figure 12-18: Off-highway signing highlighting the need to use steps to access local settlements limiting access to and from the route for some users – Bristol and Bath Railway Path. For inclusivity, another sign indicating the distance to the nearest step-free access to the same places should be provided.



Users undertaking different journey purposes or travelling by different modes may require different types of information. Commuters need simple and direct guidance, especially during disruptions, while tourists benefit from maps and interpretive details to help them explore confidently. A rural network wayfinding system should balance these diverse needs while ensuring connectivity and consistency across different routes, geographic areas and local authorities.

Consistency

Naming should typically align with the information provided on Ordnance Survey mapping, allowing users to cross-reference between physical waymarking features and their maps. If routes are to be named, an area-wide approach should be taken, preferably incorporating the names of destinations or significant landscape features (such as the Bristol and Bath Railway Path, Camel Trail, and Waddesdon Greenway).

The use of symbols on wayfinding features can convey information more efficiently, allowing for smaller and simpler wayfinding features. Symbols also help to overcome language barriers. Symbols should be carefully chosen so that they will be legible and easily understood.

Inclusivity

As with signs provided along the highway network, the sizing of letters and images on wayfinding features should take into account the likely distance between a user and any sign and the speed at which they approach it.

Tactile elements may be useful within a map or sign, particularly for users with a visual impairment. This could include features such as embossed (not engraved) characters and symbols.

Information could also be conveyed using Braille within a sign. Consideration therefore needs to be given to the location of tactile and Braille signs to ensure that they are usable by vision-impaired people.

Distances and times

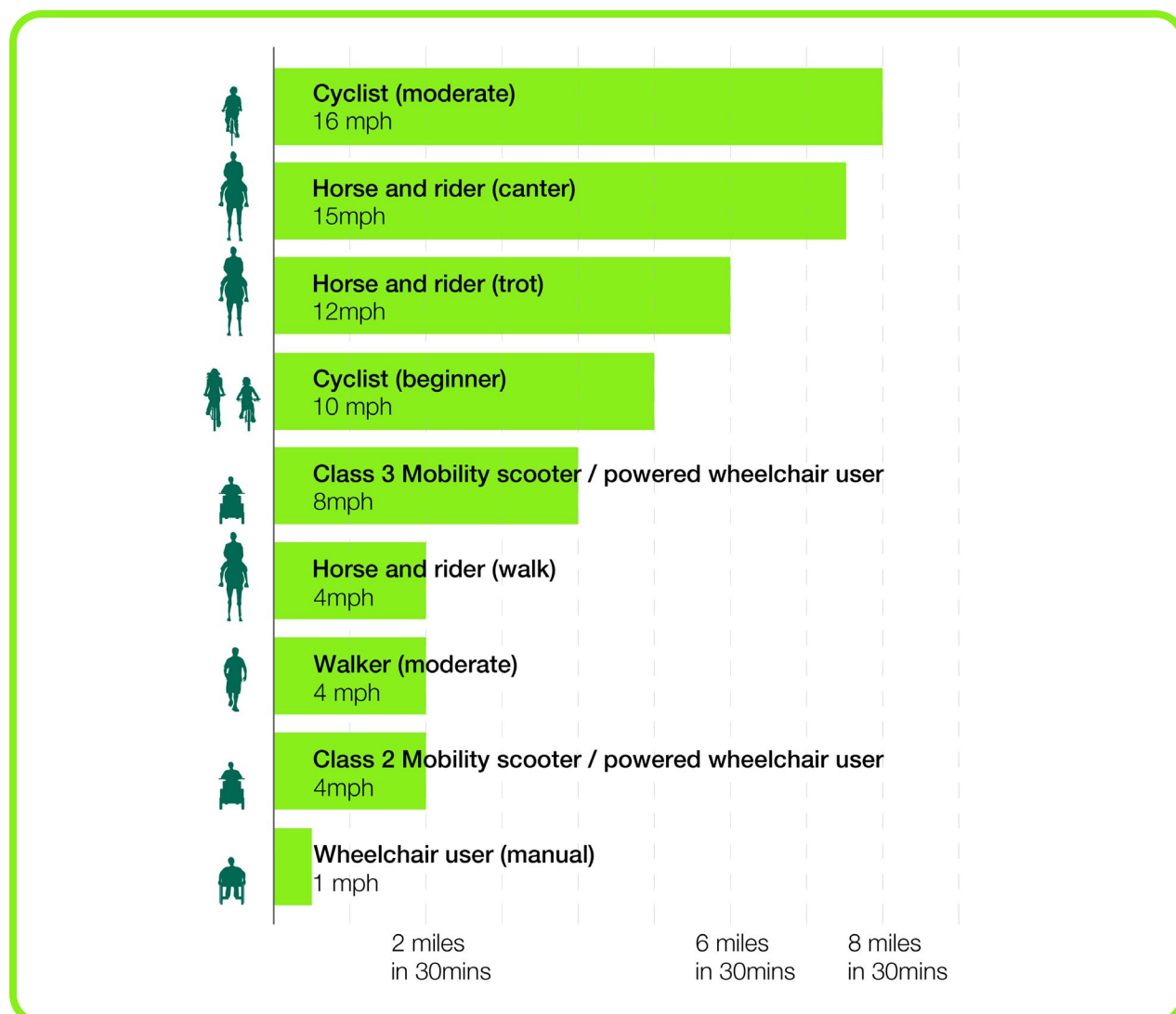
Distance or time to destinations can be provided on signs. TSRGD does not permit the use of both distance and time on the same sign within the highway environment. It is recommended that this approach also be adopted for traffic-free routes.

Distances must be shown in miles to the nearest mile. Fractional distances ($\frac{3}{4}$, $\frac{1}{2}$, $\frac{1}{4}$) should only be added for distances less than three miles. Where a distance is less than $\frac{1}{2}$ mile, this should be shown in yards to the nearest 10 yards.

If journey times are indicated, these should be calculated based on average speeds of 3mph for journeys on foot and 10mph for cycle journeys. Calculated times may need to be modified if there are any steep or long hills on a route, and foreseeable delays such as at controlled crossing points. Practitioners should check actual journey times when developing a sign schedule by walking or cycling the route.

Beyond four to five miles, journey time estimates will be inaccurate and distances should be used instead. Where routes are used by a mix of users it may be necessary to offer more than one journey time to the same destination, for example by foot or by cycle.

Figure 12-19: Typical speeds and journey times depending on the user.



Integration with direction signs for other networks

Routes away from the public highway are not required to follow TSRGD. However, as most users will be familiar with the format of signing within highways, designers should consider using styles, symbols and formats similar to those in TSRGD for consistency.

Features along certain routes away from the public highway may also need to adhere to specific design guidelines produced by others.

Figure 12-20: Extract from National Trails Brand Guidelines.



Natural England has a recommended waymarking system for PRow. The Countryside Code illustrates the standardised system of coloured arrows, the symbols for National Trails and Open Access Land, permissive routes, and provides the legal and recorded rights of way for different user groups. The symbol is prescribed in TSRGD for use where PRowS follow on-highway routes.

Figure 12-21: Natural England [guidance on waymarking public rights of way](#).



The NCN is typically marked with numbered route signs as set out by TSRGD. For further information on NCN signing, see the Walk Wheel Cycle Trust's [traffic-free routes and greenways design guide](#).

Other pathways may have distinctive branding, route names, specific symbols, or customised signing which may need to be integrated with proposals across a new or improved network.

Private landowners, particularly large organisations such as the Canal & River Trust, Network Rail and the National Trust, are likely to have their own branding and wayfinding guidance which will need to be understood and applied as appropriate.

Figure 12-22: NCN signing along Route 33 near Weston-super-Mare.



Most networks will have routes that are managed by different organisations. Practitioners will need to work with these organisations to align design standards and approaches in wayfinding.

Other wayfinding elements

TSRGD does not apply to the design of wider wayfinding elements including map and route monoliths (navigation totems) and associated route branding. These installations are regulated by local authorities, which may set out guidance on factors such as size, illumination, accessibility, and advertising. They may require planning or advertising consent.

Figure 12-23: Natural materials and context-appropriate colours used to produce information totem, Hertfordshire.



Elements enhancing comfort and safety

Many users of the active travel network will be familiar with signs that indicate the different types of users permitted to use different classes of route. However, while these can provide guidance on how people travelling by each mode should interact with one another, or with other users using the same mode. It's important to note that these signs often have a limited effect.

On motor-traffic free routes away from the public highway, designers can use surface markings and signing to set expectations around behaviour to enhance the comfort and safety of all users. This guidance should align with the Highway Code and the Countryside Code.

Figure 12-24: Example of non-prescribed signing used by the Canal & River Trust taken from their Towpaths for Everyone guidance. Credit: Canal & River Trust.



Simple signs and markings can indicate that users should slow down or give way, although these should only be applied in off-carriageway settings. These could incorporate familiar symbols, signs and markings from TSRGD, as their meaning is more likely to be well understood, although there is limited evidence of their efficacy and effectiveness in these situations.

Figure 12-25: Simple non-prescribed surface marking to raise awareness of different path users sharing the space.



Where more nuanced messaging is needed, it should be balanced and concise, reflecting the hierarchy of users given in the Highway Code. Typically, this type of messaging describes the shared nature of a route and asks users to be considerate of others by slowing down and/or giving more space to them when passing.

Graphics and patterns, particularly on path surfaces, can be used to illustrate messages. However, designers need to consider the readability of these messages given the likely speed of users, and how the features might impact on skid resistance. It is also important to consider the potential negative impacts that patterns may have on people with sensory or neurological disabilities, and on horses being ridden along routes.

Coloured surfacing within the public highway, including painted surfaces or thermoplastic graphics, do not fall within the scope of TSRGD and have no legal meaning. If used, coloured surfacing must not interfere with the appearance or operation of any prescribed markings, signs or signals, nor mimic any prescribed signs or markings. Designs consisting of a defined mark or shape would need to comply with TSRGD.

The use of striped patterns should not be used, as users can confuse these with a formal zebra or parallel crossing.

Designers should consider the longevity of these interventions and ongoing maintenance requirements.

12.15 Digital wayfinding

Wayfinding can incorporate elements that can be accessed digitally, either in advance or while on the move. These could be accessed via an app, a website or downloadable documents. Digital information needs to be provided in a format that meets accessibility standards and can be used by a wide range of people, including those using screen readers and other technology.

QR codes embedded within off-highway signs and street furniture can be linked to a range of digital information including online maps, route information, real-time information on local public transport services or video clips and audio descriptions of local heritage. QR codes cannot be included in signs placed on public highways.

Many people, particularly those who are disabled, may wish to review wayfinding information in advance so that they can plan their journey and understand any challenges a route may pose.

Providing route details on digital mapping services, possibly including ground-level photographs of the route, should be considered. As part of this it is worth noting that routes which are classified as PRoW will appear on Ordnance Survey mapping, while they will need to be explicitly informed regarding permissive routes.

In planning rural wayfinding that incorporates digital elements, it is important to consider issues around digital connectivity due to poor mobile phone signal and limited broadband speeds.

Any digital wayfinding elements should be accompanied by a plan for long-term review, maintenance and stewardship of the online information, bearing in mind the negative impacts of broken links, outdated information and the risks of people tampering with or replacing QR codes.





13. Integration with new developments and major infrastructure

13.1 Chapter summary

This chapter sets out considerations of how rural active travel routes and networks can be developed and built in conjunction with larger schemes.

It considers the policy context and opportunities that residential and commercial developments offer to develop walking, wheeling and cycling routes both on and off the development site. It also considers high-level opportunities for integrating active travel routes as part of major infrastructure projects.

13.2 Introduction

New developments and major infrastructure projects provide significant opportunities for creating and improving active travel routes. Planning and highway authorities are advised to be proactive in identifying opportunities to expand, enhance or improve rural walking, wheeling and cycling networks where it can be evidenced that these would be subject to – or likely to encourage – additional movement demands by active modes.

Compared with major road infrastructure, active travel routes are less costly to build and maintain, and can deliver significant social and economic benefits, including improved health, wellbeing, reduced congestion and environmental impacts.

13.3 Planning policy and the role of ATE

The Government has set ambitious targets for new development, in particular the delivery of housing, with the aim of delivering 1.5 million new homes over the course of the current parliament (as of the time of writing). As a result, significant numbers of new homes are either being planned or are due to be brought forward on sites that lie within or adjacent to rural areas, by virtue of being on the edge of existing settlements, or through the delivery of entirely new settlements.

The National Planning Policy Framework (NPPF) requires new developments to realise a vision-led approach to transport planning for new developments that delivers genuine choice between modes of transport, which will in turn minimise reliance on private motorised travel. To this end, local planning policies and development proposals should provide attractive and well-designed walking, wheeling and cycling networks.

These should prioritise the needs of pedestrians and cyclists when designing, both within the scheme and beyond. This policy applies in rural areas as well as in urban areas.

ATE has published a series of [Advice Notes](#) and a [Planning Application Assessment Toolkit](#) for developers and their technical advisors which set out how the organisation will assess the active travel aspects of new developments. These documents are equally applicable to developments in rural areas.

ATE provides formal recommendations on major development proposals as part of its role as a statutory consultee in the planning system. ATE's published guidance and planning assessment kit sets out requirements that should be applied to all new developments.

These include:

- transport assessments with vision-led forecasts and targets for sustainable travel, including walking, wheeling and cycling, illustrate how these trips will be distributed and assigned to the network
- a qualitative audit of active travel routes in the locality, including linkages to public transport
- a range of amenities, including local shops, schools as well as town centres and employment areas, should be accessible by walking, wheeling and cycling using well-designed routes
- there should be proposals to enhance local active travel infrastructure if necessary
- the development should enable pedestrian and cycle movements as the first choice within the site along a series of permeable, safe and interconnected routes that complement existing off-site connections to the surrounding area



13.4 Design principles for new developments

Walking, wheeling and cycling networks, both on and off-site, should enable and encourage people living in and travelling to and from new developments in rural areas to make everyday journeys by walking, wheeling and cycling including as part of longer journeys using public transport, such as commuting, education, retail, leisure and recreational trips. Guidance on how this can be most effectively delivered within developments can be found in Manual for Streets.

This will mean using all the techniques set out in this guide to plan and design active travel routes that extend beyond the site boundary and take people where they want to go. This should not only include journeys from periphery to centre such as commuting, but also the wider and interconnected radial networks involved in care mobility (for example, accompanied trips for education, to health or residential care facilities, and accessing existing leisure facilities or large shops).

This may involve improvements to quiet country lanes to prioritise pedestrians and cyclists, the creation of segregated facilities along major highways or off-highway routes along existing or new alignments. Land acquisition may therefore be needed to enable infrastructure to be delivered. The extent of the land required should be identified, addressed and confirmed at the earliest possible opportunity. The risk of not doing this, or delaying until after planning permission has been granted is that links shown as 'indicative' on masterplans fail to be delivered, reducing the permeability and/or accessibility of new development sites and consequently failing to prioritise active travel in line with government policy.

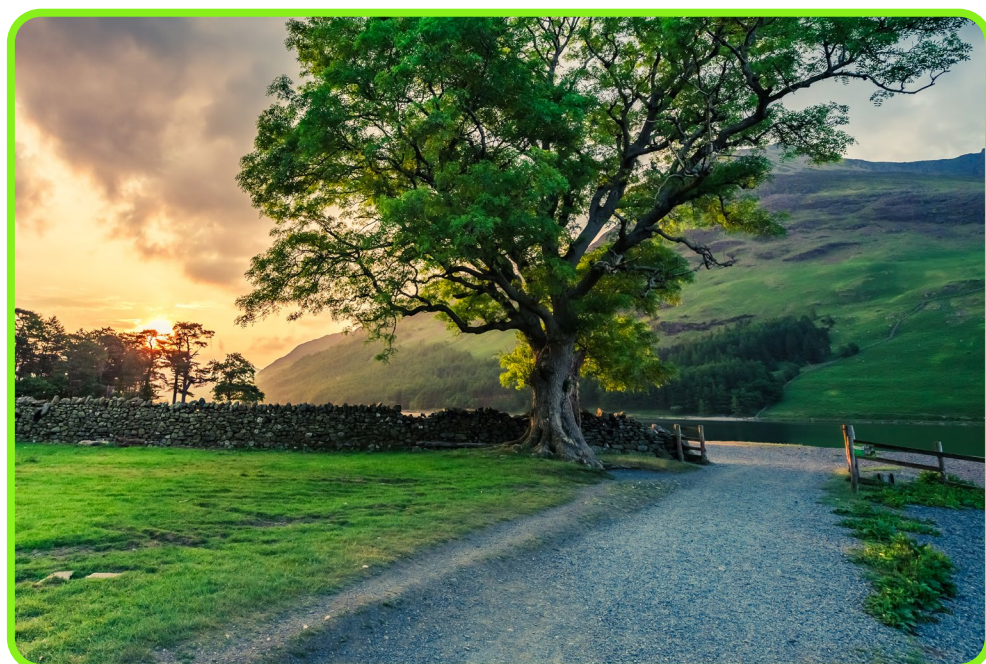
Developments in rural areas should also enable people, including existing communities, to reach the wider countryside for recreation. Often the countryside is inaccessible for walking, wheeling and cycling from a built-up area, and new developments on the edge of the settlement can open up new paths for leisure and recreation.

By providing good off-site networks and supporting facilities for active travel, the health, social and environmental impacts of increased levels of traffic from developments will be reduced.

In addition, a well-designed set of improvements that are of sufficient width, surfacing, drainage, lighting and natural surveillance, and with perceptions of safety considered throughout, will enable and encourage residents of the surrounding community to switch some existing car journeys to walking, wheeling and cycling. This could then result in reduced levels of background traffic. A small modal shift in background traffic may be more significant than a larger modal shift in development traffic.

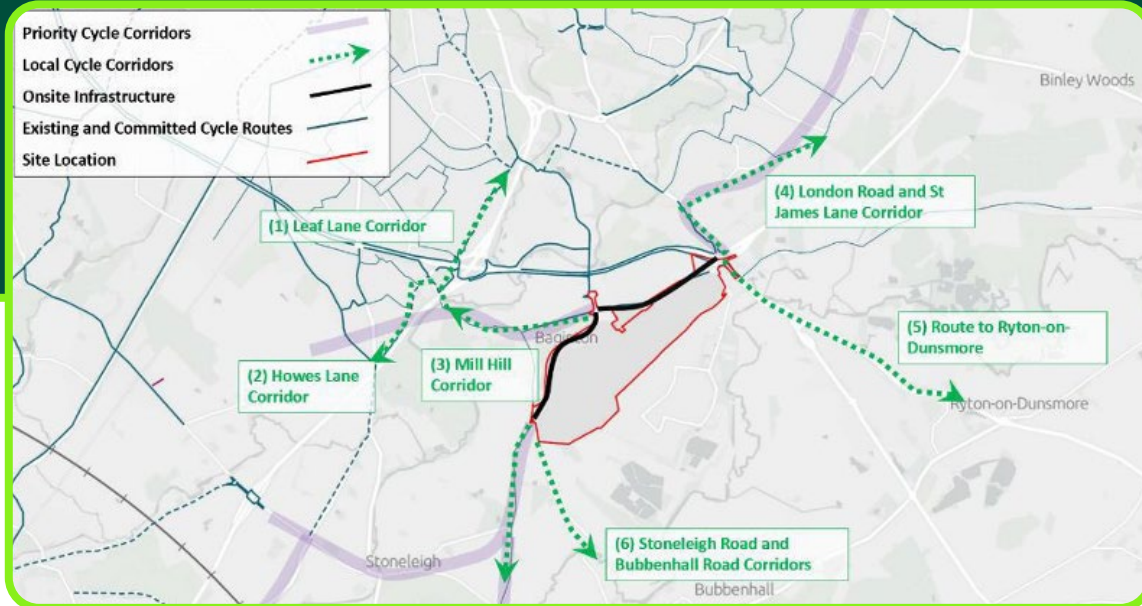
Identifying the optimum locations for these improvements can be achieved by making sure the LCWIPs and Rights of Way Improvement Plans are developed and considered together. Local plans should undertake prioritisation and mapping exercises to make sure they align.

Reducing development and background traffic may help to reduce or remove any requirements for increasing highway capacity to cater for development traffic. This means that any increase in land value and viability can then be invested not just in active travel but also in other local facilities and community infrastructure.



The West Midlands Gigafactory in Coventry will provide over half a million square metres of manufacturing space for Electric Vehicle (EV) batteries and will employ around 6,000 people working across a variety of shift patterns. Significant investment has been secured through a section 106 agreement towards the active travel network serving the site and the surrounding area, which will enable some trips to switch away from cars – see Figure 13-1.

Figure 13-1: Cycle improvement corridors, Gigafactory, Coventry.



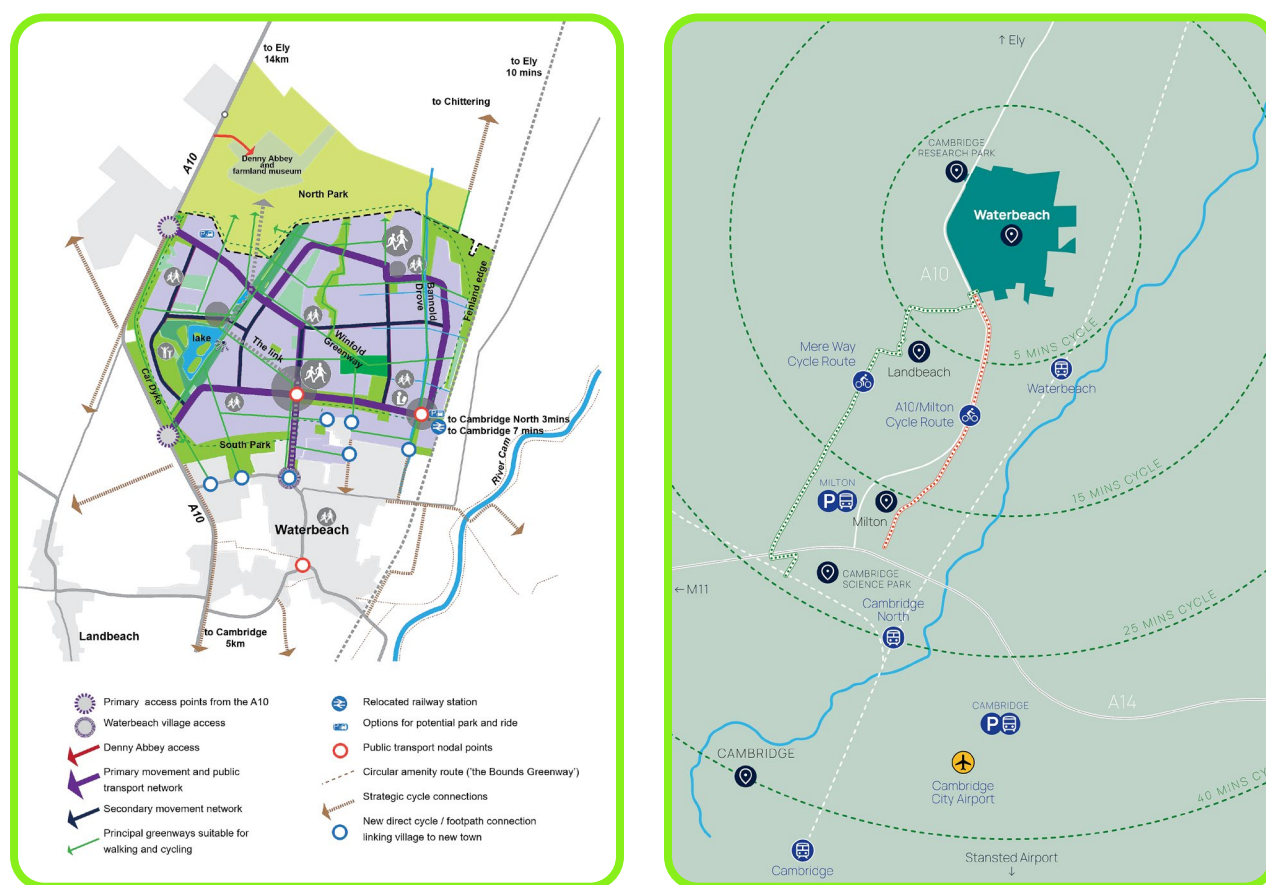
13.5 Types of development

New towns and Garden Communities

The Government is establishing a programme of [new towns](#), with each of these expected to provide at least 10,000 new homes. This new generation of new towns will be ambitious in meeting environmental targets and will create healthy and safe communities. Prioritising walking, wheeling and cycling, both for journeys within the town and for trips to nearby existing places, will be an important factor in achieving New Town Place-Making Principles.

The Waterbeach case study shows how major new residential developments in rural areas can be well served by active travel links, both within and beyond the site – see case study and Figure 13-2.

Figure 13-2: Internal and external active travel connections, Waterbeach case study.



Major urban extensions

Major urban extensions on the edges of settlements, including market towns and villages, will extend the built form of these places into the countryside. The largest of these developments may provide a mix of housing, employment, schools and other facilities and so will create both inbound and outbound trips.

In most rural locations where urban extensions occur all of the existing settlement will be within cycling distance of the new housing and facilities, and in sustainable and compact locations walking and wheeling distances will be reasonable.

However, the existing conditions and connections of highways and public rights of way may not enable most people to travel actively, particularly by cycle. In addition, previous patterns of development on the edges of settlements can make it challenging to create direct and safe walking, wheeling and cycling routes through to the centre of the town and day-to-day destinations.

It is important that these developments overcome these barriers and create routes to and from the rest of the settlement that meet all of the five core design principles – coherent, direct, safe, comfortable and attractive. This may require creation of space alongside arterial routes to allow for protected infrastructure, or land acquisition to make connections to quiet streets or create suitable off-highway routes.

Where there is a network of country lanes in the development area, it may be appropriate to incorporate vehicle movement into the main development road network. This can allow motor vehicle restrictions on selected lanes, protecting them from increased traffic and creating new active travel and equestrian routes.

This will require restrictions on existing country lane networks. This may be funded by the developer, but must be implemented by the local highway authority. Developers should work closely with local highway authorities to agree restrictions that are appropriate and enforceable. There may be opportunities to achieve the desired result through an experimental restriction prior to the submission of an application if suitable alternative routes for vehicles can be identified before development comes forward – see Figure 13-3.

Bath and North East Somerset Council introduced an experimental TRO to prohibit motor vehicles from passing along Queen Charlton Lane. It was likely that the lane would have been used by traffic as a cut-through from a new housing development. The closure was brought in prior to consultation around local plan allocations in the area, where potential housing allocation sites were being considered on land either side of the lane.

Figure 13-3: Queen Charlton Lane, Bath and North East Somerset.



Small town and village developments

Small-scale sites, often on infill sites or on the edge of settlements, will make up much of the future development in rural areas.

It is important to respect local context and avoid inappropriate ‘anywhere’ suburban-style streets and public realm, particularly in historic settings.

It is important that developments support, and contribute to where appropriate, the types of intervention to existing town and village streets described in Part B of Chapter 7, and consider the guidance in Manual for Streets.

Commercial developments

Unless they are well planned, employment and other commercial developments located in rural areas may be car dependent and impractical to walk, wheel or cycle.

Few commercial developments will be so remote that they are beyond cycling distance of residential areas, and so active travel connections meeting the standards set out in this document should be provided so they are genuinely accessible by a choice of modes.

As part of this, walking routes from nearby bus stops or potential public transport routes should also be considered. Where development comes forward adjacent to existing highways, including country lanes, consideration should be given to whether the highway corridor is wide enough for active travel infrastructure. This is important not only to serve the development but also for future routes which might pass these sites. This may mean reserving land within a development site, so that the active travel network can be completed over time.

A new waste recycling centre for Bath and North East Somerset was recently completed on land on the eastern fringe of Keynsham. As part of the development there was significant investment in the provision of active travel infrastructure along the two site frontages, despite there not being any existing network to connect to. The area adjacent to the site is currently being considered for allocation in the local plan, and the lane passing the recycling centre could potentially form part of an active travel network servicing this location – see Figures 13-4 and 13-5.

Figure 13-4: High-quality infrastructure provides active travel access to the waste recycling centre.

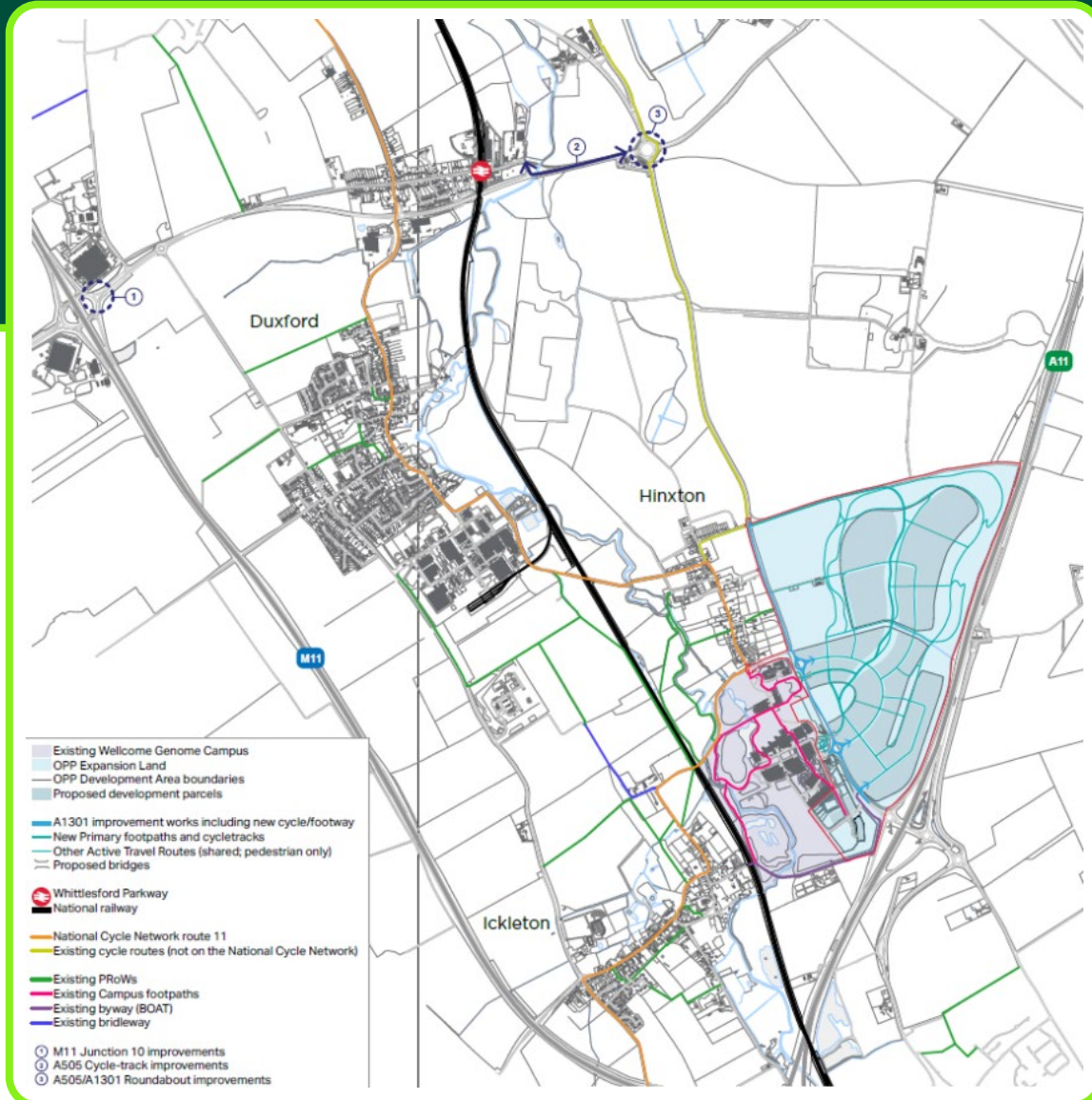


Figure 13-5: High-quality segregated lanes currently lead to a no-through road, but retains opportunities for connection in the future.



The Wellcome Genome Campus near the village of Hinxton, Cambridgeshire, is a world-class research facility being expanded to provide an additional 150,000 sqm of laboratories and offices, and 1,500 homes for campus workers and their families. High-quality walking, wheeling and cycling facilities are being provided to the site, linked to NCN Route 11 and facilities along the A1301 leading to Cambridge – see Figure 13.6.

Figure 13-6: Active travel connections, Genome Campus, Cambridgeshire.



13.6 Use of planning obligations

Where appropriate, Section 106 Agreements may secure funding for or towards the provision of off-site improvements to walking, wheeling and cycling networks, to be delivered by the local highway authority.

Depending on the circumstances Section 106 contributions or works secured by planning condition and carried out by the developer (under a Section 278 agreement) may contribute towards the delivery of a planned network of routes, established through the LCWIP and other active travel network plans. The use of Section 106 obligations is covered in Para 2.29 of the DfT's [guidance on LCWIPs](#).

The Green Lanes in Exeter (see case study) form a key part of the required accessibility interventions for new developments on the edge of the city, and so Section 106 funding was able to be leveraged to help deliver the schemes – see Figure 13.7.

Figure 13-7: Langton Lane Green Lane and new developments, Exeter.

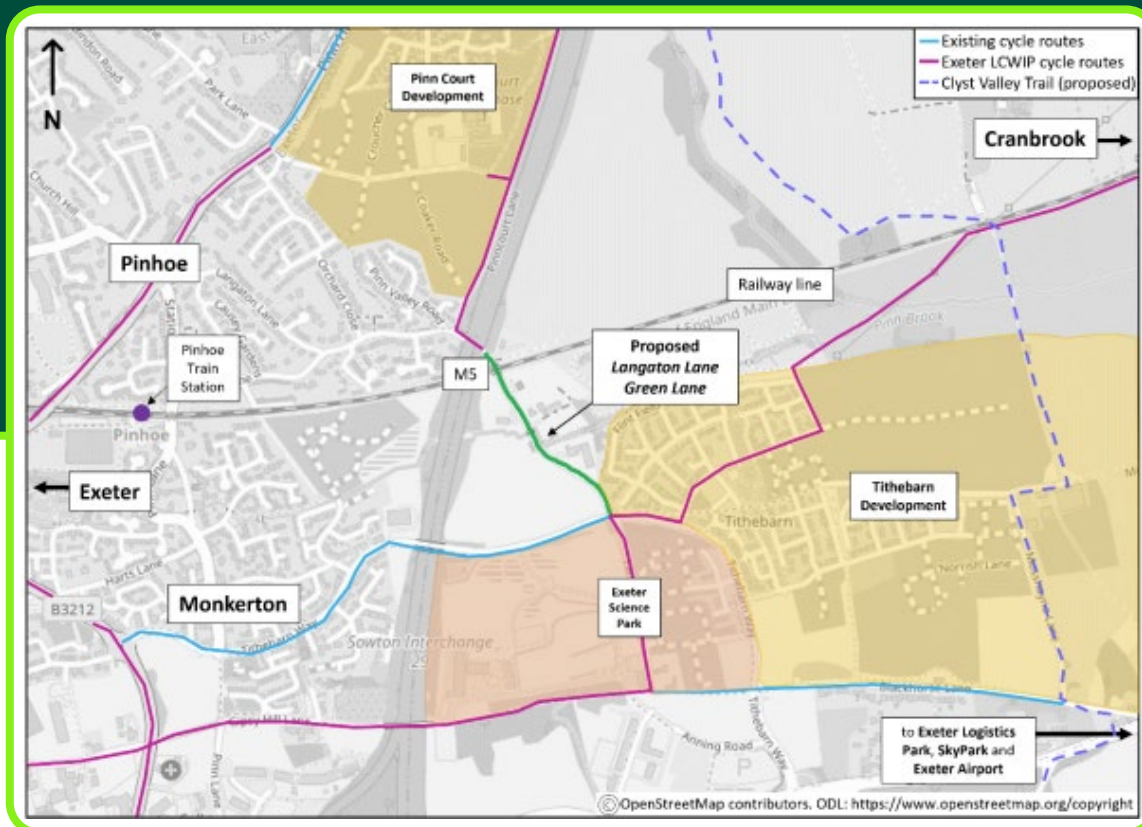


Figure 13-8: Blackhorse Lane, Exeter was stopped up to vehicle traffic when the new Tithebarn Link Road was constructed, including a parallel crossing on the desire line to cross it.



13.7 Major infrastructure schemes

Many large-scale infrastructure projects offer significant, low-cost opportunities to extend and fill gaps in active travel networks in rural areas.

All public works schemes should include making improvements to active travel networks in their project objectives where possible. This should be seen not just in terms of mitigating any severance or disruption to public rights of way and access, but seeking to leave the area in a better state following completion of the works.

Where schemes are being delivered by national or special-purpose bodies, such as National Highways, the Environment Agency and East-West Rail, local authorities should liaise with scheme promoters at an early stage to ensure they take into account their aspirations for active travel in the area. This should be developed through the LCWIP process and considered in any Rights of Way Improvement Plans.

Further guidance on the planning and design of active travel routes alongside new highways, railways and flood defence schemes is given in Chapter 8.





14. Detailing, construction and maintenance

14.1 Chapter summary

This chapter considers the construction and maintenance of rural active travel routes, primarily focused on the delivery of new motor traffic-free routes. It builds on the advice in LTN 1/20 on construction and maintenance principles.

The delivery of new or improved rural routes requires a careful approach to construction. The challenges of constructing new routes in rural areas are different to those found in urban settings. The design will need to ensure that the route remains usable by all over the long term and minimise the potential impacts of routes on rural environments. Routes should be designed to be resilient to weather extremes, flooding, erosion and the impacts of plants and animals.

Routine and seasonal maintenance is essential to the safety and comfort of users and the attractiveness of the route. Defects, debris and the encroachment of vegetation can make routes unsuitable or impassable to some. Maintenance costs can be minimised through careful design and selection of construction materials. Regular inspections enable maintenance work to be cost-effectively programmed and prioritised.

14.2 Path construction and specification – general

Introduction

The careful design and specification of materials and construction methods can simplify the delivery of new and enhanced routes and reduce the long-term maintenance burden.

It is important to consider the management of the route and its maintenance requirements at the design stage. Higher construction specifications, such as surface type, may result in a route with greater upfront costs but lower ongoing maintenance requirements and a greater lifespan, resulting in a more economical scheme in the long term.

Mobilisation

Designers should consider construction access requirements at an early stage, including vehicle access and the areas required for welfare facilities and material storage.

The impacts of site compounds and construction activity on biodiversity need to be understood and may be a factor in the calculation of any requirements for Biodiversity Net Gain.

Construction accesses should be formed from the highway network where safe movement between the highway and the construction site can be achieved. The suitability of the road network to accommodate construction vehicles and vehicles delivering materials and equipment to a site should also be considered, along with any necessary traffic management measures.



14.3 Earthworks

The topography along the route alignment needs to be assessed to determine earthworks requirements – as noted in Chapter 5, they can be expensive and intrusive and should be minimised. If a route cannot be constructed that achieves at least absolute minimum gradients (see Table 5-1), a different horizontal alignment should be considered.

Depending on the sequencing of construction and the length of a route, it may be necessary to transport and store excavated materials on a temporary basis. Space for this should be planned into the requirements for site compounds, with the aim of storing materials offline to avoid the need to repeatedly move material on site. The suitability of this material for use as engineered fill needs to be considered. If the excavated material is unsuitable, the design should attempt to retain as much material as possible within the landscape.

Ground conditions should be investigated, including the stability of the soil, underlying materials and the presence of any potential contaminants, such as oil, asbestos, or the presence of landfills, mine workings or made ground. Advice from a geotechnical specialist should be sought as part of the design process.

Previously engineered routes such as railway track beds and canal towpaths can provide suitable foundations for a new or improved route without extensive works. Ground investigations will help to determine whether any additional stabilisation is necessary.

Retaining structures may be required to ensure the stability of a route, for example if it runs adjacent to a steep slope, or where the path passes between slopes and existing walls. Retaining structures can significantly increase the cost of a project so alternative solutions should be explored where possible.

Where they are unavoidable, designers should ensure that accessibility is provided for all users, and they should minimise visual impact. Options include:

- timber sleeper and pile walls
- crib walling
- gabion baskets
- reinforced earth
- brickwork or blockwork
- sheet piling
- reinforced concrete
- paving slabs (suitable for low retained heights)

Figure 14-1: Gabion baskets used as retaining wall, Dublin.



Figure 14-2: Sheet piling used to form part of route along Egret's Way, Sussex.



Any cuttings will need to be carefully designed with regard to slope stabilisation and the possible use of retaining structures. Drainage requirements should be considered as cuttings may be prone to flooding.

Where routes are constructed adjacent to existing highways or properties, it may be necessary to provide a visual and physical barrier to increase user comfort and the attractiveness of a route (see Section 6.3), or for safety and privacy reasons. Screening could be in the form of an earth bund or a fence or hedge. Routes may also be constructed on top of existing or new earth bunds used for water management and flood defences adjacent to waterbodies – see Section 8.10.

14.4 Formation

Sub-grade

The sub-grade must provide stable conditions on which a route can be formed. Ground conditions may vary significantly in rural areas – new routes may be constructed away from existing highway corridors, with some being built on greenfield sites.

Work to compact or improve the existing ground may be required if ground conditions are poor. This can be done by providing a capping layer beneath the sub-base, using larger stone or crushed rock. Geogrids or geotextiles can also be used to increase the stability and load-bearing capacity of the existing ground, while enabling a shallower foundation.

Sub-base

A properly specified sub-base is critical to the integrity of a route. It provides the main load-bearing layer, helping to distribute loads evenly. A well-compacted sub-base of an appropriate depth will usually be sufficient, but this will depend on the strength of the existing sub-grade and anticipated path loadings, including by maintenance vehicles.

A range of sub-base materials may be available, which should be locally sourced and use recycled material where possible. Granular materials may be considered for path designs that are seeking to provide permeable drainage through the layers.

Tree roots can cause issues to arise along a route long after construction is completed. Where possible, routes should be constructed away from existing trees and new tree planting offset from the route, or appropriate systems to manage root growth such as a root barrier should be incorporated.

In areas with dense tree root systems or where ground disturbance is undesirable, no-dig construction methods can be used to minimise environmental impact and future issues from tree roots. This will involve building above existing ground level to avoid disturbing tree roots by maintaining existing soil conditions. No-dig construction may also be required in places of ecological or archaeological significance. It can also be used in areas with poor ground conditions as a load support.

Approaches include the use of cellular confinement systems, such as interlocking plastic honeycomb-like grids, on top of the existing ground, which are then filled with clean angular stone to allow water to permeate. The route is then finished with a porous binder course and surface course.

Figure 14-3: Example of geocell sub-base being constructed, Egrets Way, Sussex.



14.5 Surfacing

Summary principles

The choice of surfacing can have a significant impact on user experience. A well-maintained, level and smooth surface enhances the usability, inclusivity and accessibility of a route, making it more comfortable and attractive. The specification should consider typical user requirements, the function of a route (such as leisure, commuting, access to education) and the context of the route within its environment (such as landscape, ecology, heritage, economic activity, visual impact).

There is no single recommended approach to route surfacing. However, it is strongly recommended that bound surfaces should be used where possible as they will be suitable for most users (see Section 4.4), particularly those with mobility difficulties, including those using manual wheelchairs.

An unbound surface such as crushed stone or hoggin might be more desirable to some stakeholders, particularly in areas where aesthetic, heritage or nature conservation requirements may be given greater weighting.

While initially cheaper to install, these materials will typically require significantly greater levels of inspection and maintenance in the long term. This makes them more costly than bound surfaces, in addition to being less suitable to all users in all seasons.

Figure 14-4: Hoggin path along a bridleway in the Peak District National Park.



In choosing a paving material, the lifetime cost of each should be considered including the cost of installation and ongoing inspection, maintenance and eventual replacement.

The choice of route construction can also impact upon the economic appraisal of a scheme. The [Active Mode Appraisal Toolkit](#) typically considers a time period of 20 years, although longer periods, up to 60 years, can be considered if an infrastructure scheme is considered to have a comparable design life to major road or rail projects.

A well-constructed bituminous path could be expected to have a design life of over 30 years, although surface treatment or dressings may be required every 10 years or so. By comparison, a crushed stone path may require significant renovation and relaying every 5 to 10 years.

Types of surfacing

This section expands upon the surfacing principles set out in Chapter 4.

The most common options for bound path surfaces are either hot rolled asphalt (HRA) or asphalt concrete (AC, formerly known as dense bitumen macadam, DBM, or bitmac). Both are combinations of bitumen and aggregate. Thicknesses of each layer of the path construction will need to be adapted to suit each individual location. Material with a smaller stone size will result in a smoother surface but will be less capable of withstanding traffic loading. Material choice needs to be considered against vehicle access requirements, including for local access, maintenance and emergencies. DMRB CD 239 provides detailed guidance on route construction specification.

Machine-laid surfaces are recommended to achieve a smooth and consistent finish that offers greater accessibility and safety for a range of users. Access constraints and the specification of alternative surfacing materials may mean this is not possible, however. In these locations hand laying will be required, although this is not recommended for extended lengths.

As discussed in Section 4.4, a bound bitumen surface is less desirable for equestrians due to reduced slip resistance for horses' hooves. Where appropriate surface course specifications can be adjusted to increase slip resistance, or a tar spray and chip (bonded) surface treatment may provide an acceptable solution. Recycled rubber and aggregate treatments (also referred to as 'rubber crumb') may also be considered, but these typically have a lower design life and need more maintenance.

Figure 14-5: Newly installed asphalt on the Lias Line, with trotting strip provided either side.



The Lias Line Greenway case study demonstrates the importance of working closely with user groups on choice of materials.

Initially, a sharp sand binding was provided either side of the path as a trotting strip. However, following negative feedback from equestrian groups the future phases of this route will use a wildflower meadow/rough soil as a trotting strip, which will be softer for horses.

The aesthetics of path surface type in relation to the landscape, character and context should be considered, but this should not be an overriding factor in determining surface material choices. The use of certain materials in rural areas may attract criticism around the ‘urbanisation’ of natural environments. However, this challenge is rarely used in relation to road networks which also incorporate narrow, bound surfaces and are common throughout rural areas. Designers should also be aware that the blackness of a new surface will oxidise and fade over time, which could be a useful consideration when managing stakeholder concerns. The degree of fading will, however, be affected by the type of aggregate used.

Figure 14-6: Machine-laid path construction, Rye, Sussex (Camber Road NCN 2 improvement scheme April 2022).



Alternative route surfacing materials may be necessary in order to respond to potential impacts upon heritage sites and their setting, or in areas within or visible from protected landscapes. Surfacing that incorporates local aggregates, or materials such as bonded stone, coloured asphalts, resin bound surfacing or a locally sourced crushed stone surface dressing can be specified to help address these concerns by offering a more natural appearance than black bituminous surfacing.

In specifying surface dressings, designers should consider the durability of the material and its application, and plan for regular maintenance and renewal reflecting the expected longevity of the surfacing. Other factors to consider are the surface texture, which is likely to be rougher than a bound bitumen finish. While this may deliver benefits for equestrians due to increased skid resistance, it could also have an impact on accessibility, particularly affecting people using smaller wheels. Abrasions may also be more severe if someone were to fall on this type of surface.

A bitumen or other impermeable surface may be undesirable in some rural locations that are prone to flooding. Additional runoff may create implications for flood risk management (see Section 14.7 below), meaning porous path surfaces such as porous macadam, recycled rubber and aggregate or resin-bound surfaces might be more suitable. However, when specifying permeable surfacing the drainage of the path formation will need to be considered and ground permeability testing will be required to determine the viability of infiltration.

Figure 14-7: Tow path with spray and chip surface dressing – NCN 4 Kennet and Avon Canal.

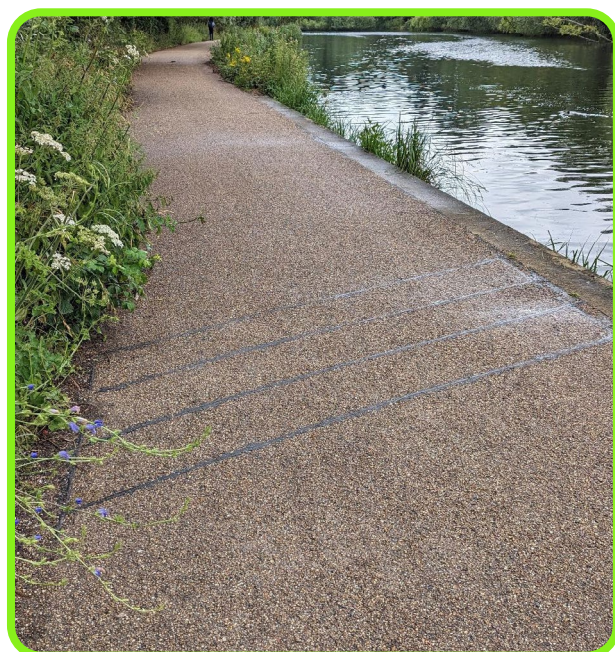
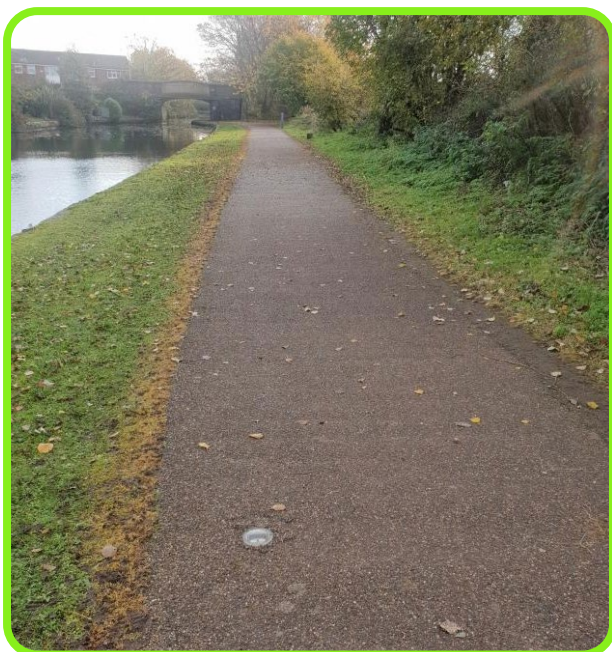


Figure 14-8: Resin-bound gravel surface, Manchester.



Where permeable surfacing is used, the lower pavement layers must also be specified as permeable to prevent water becoming trapped in the upper layer. If such surfacing is specified in locations where ground infiltration is not possible, a drainage solution must be provided to collect surface water that has infiltrated through the surface course and into the sub-base to maintain the longevity of the pavement construction.

Figure 14-9: Rubber crumb permeable surface example – Trans Pennine Trail, Warrington.



Timber or glass-reinforced plastic (GRP) decking may be a suitable option for structures such as bridges or boardwalks, or where surfaces need to be elevated above the ground. GRP decking may be better suited to sites with damp conditions as it offers a more durable alternative to timber.

Figure 14-10: GRP boardwalk, Derbyshire.



Table 14-1 overleaf summarises the positive and negative factors associated with different path surface types used for rural active travel routes.

Walking Scotland's (formerly Paths for All) [Surfacing Guide for Path Projects](#) provides additional information about path surface types that may be suitable in rural areas, including indicative costs.

Table 14-1: Path surface type – General considerations.

Surface type	Positive aspects for use on active travel and wider network	Negative aspects for use on active travel and wider network
Bound surface – asphalt concrete, HRA	- provides a smooth and consistent surface for those walking, wheeling and cycling - hard wearing and lower maintenance intervention than unbound surfaces - cheaper than other bound surface options - widely used on traffic-free routes – quality is typically good - surface dressings can be applied to soften appearance - surfacing can be porous	- normally impermeable so can result in standing water - may be uncomfortable and slippery for horses - may have greater visual/environmental/ecological impacts in sensitive rural locations - may be susceptible to root damage - can become icy in winter and will therefore require gritting - can become too hot for dogs' paws in summer - hard surface may be uncomfortable for walkers and runners' joints
Bound surface – concrete (for agricultural crossover pad)	- provides a smooth and consistent surface for those walking, wheeling and cycling - hard wearing with lower maintenance costs than other bound surfaces - quick to install	- higher implementation cost and longer implementation time than bituminous surface courses - impermeable, so can result in standing water - may be uncomfortable and slippery for horses - can become icy in winter and will therefore require gritting - increased tyre noise when cycling
Surface dressings (including tar spray and chip or resin-bonded)	- can be used to address aesthetic concerns over bituminous materials - increased slip resistance - may slow cyclists as surface resembles unbound material - typically provide more grip for horses - maintains an impermeable surface - can be used to enhance and extend life of existing bituminous surfaces	- rougher finish may impact accessibility - possible increase of abrasion following a fall - excess stone requires sweeping away post-installation - may require more frequent maintenance than a traditional bituminous surface - may be susceptible to root damage - may increase journey times by wheeling and cycling
Resin-bound aggregate	- provides a smooth and consistent surface for those walking, cycling and wheeling - can be implemented in a variety of colours to suit local context - porous surface – can offer benefits at sites where drainage challenges are encountered, providing sub-base drainage is sufficiently designed	- higher implementation cost than bituminous surface courses - requires specialist construction and is typically hand laid - may be susceptible to root damage - may be uncomfortable and slippery for horses - may increase drainage requirements if ground infiltration is not viable

Surface type	Positive aspects for use on active travel and wider network	Negative aspects for use on active travel and wider network
Bound surface – Rubber and aggregate, porous asphalt	- provides a smooth and consistent surface for those walking, wheeling and cycling - can be implemented in a variety of colours to suit local context - some may be composed of recycled materials - offers more flexibility underfoot and is more comfortable to horses, walkers and runners - porous surface – can offer benefits at sites where drainage challenges are encountered, providing sub-base drainage is sufficiently designed - less chance of becoming icy in winter due to permeability	- higher implementation cost than bituminous surface courses - frequency of required maintenance and need to ensure continued porosity - comparatively new surfacing material. Longer-term maintenance requirements may be greater - requires specialist construction and is typically hand laid
Unbound surface – such as compacted/ crushed or graded rock/stone or hoggin/self-binding materials	- cheaper to implement than bound surfaces - greater slip resistance for horses - sometimes perceived as more acceptable in some rural environments - may help to slow cyclists on shared routes	- may be rough and uneven for those walking, wheeling and cycling, especially those with shuffling gaits or impaired mobility - less inclusive as worn surface can be challenging to wheel across, particularly with small-wheeled wheelchairs, mobility scooters and pushchairs - increases journey times by wheeling and cycling - higher maintenance intervention required – likely to be susceptible to damage from water and vehicles - can be muddy in wet weather and dusty in dry weather making routes less comfortable and attractive to use or even impassable for periods - unpaved paths can be prone to drainage problems, with any slight depressions in the surface causing ponding that can become soft spots or collect slippery deposits - higher full life costs than bound surfaces
Timber decking/ boardwalk	- offers a more natural aesthetic in rural environments - minimal drainage intervention required as surface is elevated off the ground - can be easier to implement than bound surfaces where site conditions are unfavourable – such as the presence of tree roots and sites inaccessible to large machinery	- shorter design life than that of bound surfaces - can be slippery when wet, or susceptible to moss/mould growth in damp/shaded environments. Will require additional anti-slip surfacing to be applied - not accessible by vehicle traffic for the purposes of maintenance or emergency access, and may limit access to points further along a route

Surface type	Positive aspects for use on active travel and wider network	Negative aspects for use on active travel and wider network
GRP decking/boarding	- minimal drainage intervention required as surface is elevated off the ground - can be easier to implement than bound surfaces where site conditions are unfavourable – such as the presence of tree roots and sites inaccessible to large machinery - offers good skid resistance - robust material that offers minimal maintenance intervention - longer design life than timber decking	- high implementation cost when compared to all other surface types - less accessible by vehicle traffic for the purposes of maintenance or emergency access, and may limit access to points further along a route

Kerbing and edging

Kerbs or edgings are used to contain a path and prevent failure of its edge from traffic loading or unfavourable ground conditions. For many rural routes away from the highway, kerbs or other edge restraints may not be required as vehicle loadings will be minimal. Where kerbs or edgings are not needed, the sub-base should be extended 300mm beyond the surface course on each side to provide support to the unrestrained edge of the surfacing.

As noted in LTN 1/20, path edging may also be required in more formal settings such as parks or public realm schemes. It may also be required to reinforce construction, such as preventing the movement of block paving or the wash out of the sub-base in areas prone to flooding.

The choice of whether to use path edging will be location specific. However, given that in rural locations edgings can become quickly overgrown by adjacent vegetation and verges, the need for edgings should be considered early in the design process. Omitting edgings in favour of a slightly wider surfaced path for rural routes could simplify construction and provide significant cost and time benefits.

Path edge treatments will have an impact on maintenance of routes, including of the edging themselves, and activities adjacent to the route such as the management of vegetation.

As with the selection of surface materials, the choice of edge treatment and kerbs should reflect local character. In more sensitive contexts, designers may need to consider conservation kerbs or locally sourced stone and timber to form path edges.

Path edgings may be formed from materials such as pre-cast concrete, timber, or aluminium. Timber edgings are cost-effective, but additional lateral support may be required to ensure that the edgings are not distorted or displaced during laying and compaction of the path. Timber edging can become slippery over time, and the lifespan is wholly dependent on the quality of treatment used. Timber may require more regular replacement than concrete, and there could be environmental issues with treated timber leaching into water.

The time taken to install concrete edging is similar to timber edging, but lower maintenance and replacement requirements mean that concrete products could have a lower whole life cost than timber.

Aluminium path edges are a cost-effective and durable option to create clean boundaries that are relatively quick and easy to install. However, the narrow profile of this edging can present a hazard to path users if exposed due to surface degradation or erosion of verges.

Figure 14-11: Aluminium edge example.

Credit: Walk Wheel Cycle Trust.



Kerbs should not normally be required on traffic-free routes and should be avoided where possible. Where routes meet priority road crossings, flush kerbs must be provided with tactile paving – see Chapters 9 and 10.

Dutch entrance kerbs can be used at road crossings, continuous footway crossings or vehicular crossing points to maintain a consistent level across routes.

Figure 14-12: Construction of a Dutch entrance kerb.



Figure 14-13: Precast concrete edge, Coalville.



14.6 Hedgerows, fences and gates

Hedgerows are common features alongside rural active travel routes. Planting and managing hedgerows helps to increase biodiversity, while providing an attractive feature which also offers some protection from wind, air pollution and traffic noise.

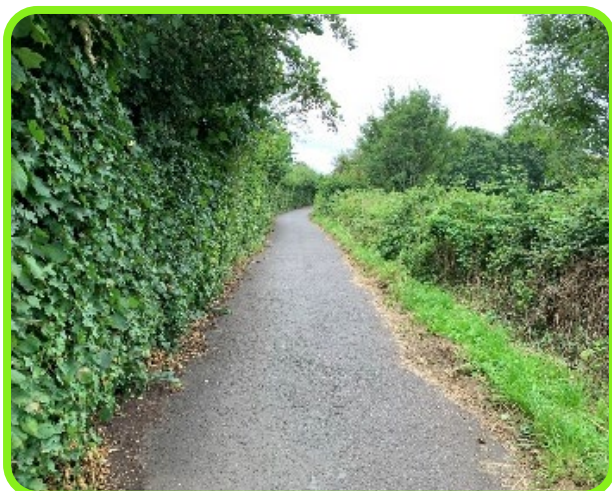
As advised in LTN 1/20, routes should be designed to provide a minimum of 1m between the face of any hedgerows and the route edge. Designers should consider the typical size of plant species within new hedgerows and their rate of growth so that this offset is maintained once the hedgerow is mature.

New and existing hedges should be managed so that they do not overhang or encroach across routes and sight lines, including consideration of sight lines for people on low (such as adapted or recumbent) cycles.

When selecting plant species designers should consider factors such as toxicity and pollen. Species that drop leaves, thorns or fruit should be placed further from the route.

The maintenance of existing or newly planted hedgerows requires consideration. As most rural hedgerows are cut annually by local landowners or farmers using tractor-mounted cutting equipment, the width and construction specification of a route would need to ensure maintenance access is achievable.

Figure 14-14: Hedgerow and fencing examples, North Somerset.



Routes should be unfenced wherever possible. This will help them to feel more open and reduce concerns about personal security of path users. Fencing may also reduce the usable width of a path and increase construction and maintenance costs.

However, as noted in Chapter 8, fencing will sometimes be required for livestock control or to enclose and secure adjacent land. A stock fence of 1 to 1.2m should be sufficient in most cases, but occasionally where there is a need to contain larger animals fence heights up to 1.5m may be required. Plain wire should be used instead of barbed wire for fences adjoining public rights of way. If barbed wire must be used for stock control, it should be attached on the stock side of any posts, with a minimum 1m margin between the fence and path edge.

Timber post and rail stock-proof fencing is recommended in most situations, or timber post and wire mesh fencing may be sufficient. Where the security of an area adjacent to a route drives the requirement of fencing (such as adjacent to live railways), weldmesh fencing may be required. Where possible palisade fencing should be avoided as it can feel obtrusive or visually dominating. The type of fencing should be agreed with stakeholders.

Fencing might also be required for edge protection, if the route is adjacent to a railway, watercourse, high-speed traffic or steep drop, although this should be decided using a risk-based approach. Many traffic-free routes have operated satisfactorily for many years alongside water features with no need for fencing. Canal towpaths are rarely fenced off except at discrete locations, for example.

Fences should be set back from a path edge by at least 0.5m or, where not possible, the route should be widened by 0.5m for each edge bound by a fence over 600mm high. The impact of fences on sightlines and the sense of enclosure should be considered for different users, including children and those using wheelchairs or low recumbent cycles and mobility scooters.

Fences may require planning permission if they are over 1m high and adjacent to the public highway. Fences over 2m in height will generally require planning consent in all locations.

Gates should generally not be used along routes but may sometimes be required for occasional vehicle access or livestock control – see Section 8.6.

14.7 Drainage

Good drainage is crucial to the longevity of a path as standing water can damage its surface and stability. The collection and management of surface water need to be carefully considered. The surrounding topography and existing drainage networks should be reviewed as part of the design.

Sustainable Drainage Systems (SuDS) should be incorporated into the design of new or upgraded routes wherever possible to help reduce flood risk. Extensive lengths of new impermeable path could result in a significant volume of run-off, particularly during high-intensity storm events, which could flow onto adjacent properties or overwhelm existing drainage systems.

Paths should be constructed with a crossfall or camber of 1 to 2% (1:100 to 1:50), with an absolute maximum of 2.5% (1:40), as set out in LTN 1/20 Chapter 5. Steep crossfalls particularly impact mobility aid users, requiring greater effort, and introduce the risks of overturning or rolling away for users of wheelchairs, scooters, tricycles and other large cycles.

At bends, drainage should be designed so that surface water flows to the inside of a bend. In these locations, crossfall across the entire path is recommended as this will avoid the introduction of a negative camber falling to the outside of a bend.

They may be designed in such a way to maintain access along a route most of the time, apart from when livestock need to be moved across a route (see St. Peter's Greenway case study).

Verges can act as natural drainage, absorbing surface water runoff. Verges should be finished slightly lower than the path surface to avoid water ponding at its edges.

It is important to understand the properties of the existing ground to ascertain if infiltration through the path or verges adjacent to the path is feasible. Trial holes should be excavated and soakage tests carried out to determine the level of infiltration that can be achieved.

Subject to infiltration testing, simple drainage ditches, swales or filter drains alongside the path can be used to slow runoff, reducing the load on traditional drainage systems. Soakaways can also be used to manage surface water runoff by storing then infiltrating rainwater into the surrounding soil.

Figure 14-15: Swale between vehicle access route and shared path – RHS Bridgewater.



Where infiltration is not viable, drainage collection features such as ditches, swales or filter drains may need to be physically connected to an existing outfall and attenuated on-site. Designers should consider this early in the design process as it may influence the land required to deliver the route.

Figure 14-16: Swale drain in Bush Hill Park, Enfield, London.



Designers should also refer to the Department for Environment, Food and Rural Affairs' (Defra) [National Standards for SuDs](#) and the Environment Agency/Defra's [Natural Flood Management manual](#).

Paths in cuttings or wetland areas may need to be raised or built on a structure to respond to drainage issues. A causeway or boardwalk could provide a suitable solution. A boardwalk constructed with composite materials such as GRP will provide a more durable solution – see Figure 14-17.

The path upgrade at Kennington Meadows in Oxfordshire involved raising the level of the path with drainage ditches either side and a series of pipes beneath the path to take water into the ditches. This scheme required clearance and approval from the Environment Agency.

Figure 14-17: Path upgrade with new drainage system, Kennington Meadows, Oxfordshire.



When routes follow country lanes, there is often the need to improve poor drainage – see Figure 7.3 as an example of where improvements have been made. This may require installing drainage ditches or culverts. In some cases, cutting and clearing ‘grips’ into existing ditches can address ponding issues on existing rural lanes.

Maintaining existing drainage systems is important, which will involve checking outfalls and clearing debris. Appropriate soil management will also help to prevent compaction and improve drainage.

Figure 14-18: Country lane with poor drainage – South Hams, Devon.



For routes that pass through towns and villages, constructing rain gardens and ensuring existing gullies are maintained can help to reduce the volume and speed of stormwater runoff into the existing drainage system.

The Walk Wheel Cycle Trust worked with Milton Keynes City Council to install a new SuDS as part of works to improve a 200m long stretch of an existing traffic-free path on the route between Castlethorpe and Milton Keynes.

Figure 14-19: Trial of flood prevention system on the NCN.



Credit: Walk Wheel Cycle Trust.

The system used includes drainage units made from recycled tyre rubber, which are permeable and allow water to flow down away from the route. They are low maintenance, and can be installed using less excavation than traditional drainage methods. This helps protect trees and hedges along the path.

14.8 Ecology

The potential impacts of path construction on established trees and protected flora and fauna needs to be fully understood and mitigated particularly in sensitive habitats (such as SSSIs), as does the presence of invasive and controlled plant species such as Japanese knotweed.

Specialist advice from an ecologist and arboricultural specialist should be obtained during the design process to record, minimise and mitigate any issues raised before undertaking any path construction works. Failure to contain the spread of invasive non-native plant species may result in a fine, and/or criminal prosecution.

The conversion of an unsurfaced path to a surfaced path can negatively impact invertebrates, with surfaced routes creating a barrier effect, and potentially also by removing potential nesting and foraging sites for species associated with bare ground.

Some construction materials, including plastics and rubber-crumb surfacing, may have ecological impacts.

The ecological impacts of maintenance activities also need to be considered. This includes the timing of activities to minimise impacts on wildlife, and careful consideration around the use of chemicals, for example in the management of weeds or in de-icing routes.

Licences may be required for working in areas where protected species are present, including badgers and dormice. Works close to aquatic environments may require additional wildlife management licences to ensure habitat protection of protected species such as beavers and great crested newts.

Figure 14-20: Boardwalk installed on West Windermere Way.



14.9 Lighting

Introduction

This section expands upon the lighting principles set out in Chapter 4.

For the planning and design of lighting in rural areas (where introduced), design teams should include a lighting designer to ensure compliance with standards, best practice and guidance. The approaches taken in urban areas are not necessarily transferrable to rural areas, where there is a need to sometimes consider a wider range of factors when deciding how lighting is designed.

Important factors relating to lighting requirements in rural routes include:

- considering how lighting a route adjacent to an unlit road, may affect its usability, safety and inclusivity in the hours of darkness
- safety concerns that mean that some user groups, in particular women and girls, may be deterred from using unlit paths after dark, either choosing alternate routes or modes of transport or not making trips at all
- the variety of trip purposes the infrastructure will support, for example access to schools during winter months, may be affected by lighting decisions
- areas along new or improved routes that are likely to be dark, rich in biodiversity, and home to protected species that are light averse
- routes that may be within areas that are, or are looking to become, certified DarkSky reserves. There is a rising trend for rural villages to have local dark skies policies or ambitions to achieve full certification from DarkSky
- power supply along or near routes is often limited, leading to increased cost implications for schemes
- routes that are likely to pass through sparsely populated areas with minimal overlooking for safety, leading to light being less effective as a crime deterrent, although it may still create a better perception of safety in some circumstances

Whether to light a route

An assessment of whether to light a route should typically cover the following issues:

Security and personal safety

- features should be identified where lighting would be beneficial to reduce risks to users during darkness, including crossings, junctions, tunnels, bridges, steps, significant bends and other hazards
- the potential for interactions between people walking, wheeling and cycling, equestrians and with motor vehicles, taking account of how people move around during hours of darkness
- the potential for both crime and the fear of crime within poorly lit and unlit schemes, which should be assessed with particular regard to the needs of groups such as women and girls, and those with other protected characteristics under the Equality Act
- any potential unintended consequences of providing lighting, such as anti-social behaviour

Environmental

- existing lighting and light pollution levels
- the potential for negative impacts on some species, for example light-sensitive protected species such as bats. Interference with bats' roosts or foraging routes by installing lighting can carry legal implications
- the interaction with areas used for Biodiversity Net Gain that could be susceptible to negative lighting impact
- the impact on sites highlighted within local nature recovery strategies such as SSSIs or National Landscapes
- the impact on DarkSky-certified areas and general light pollution prevention principles, in line with responsible outdoor lighting at night (ROLAN)

Buildability, maintenance and affordability

Where lighting is to be provided it should generally be to BS5489-1. Guidance is given in BS 5489-1 Design of road lighting, and PLG23 Lighting for Cycling Infrastructure. Designers should consider:

- any requirements for additional land needed to ensure a suitable lighting system, for example to enable the safe setback of lighting columns, bollards or signage away from path users
- any requirements for utility diversions
- requirements for power supplies, such as new feeder pillars, ducting, and chambers

Further considerations

Designers should consider:

- new and emerging technology such as solar studs, reduced blue light content LEDs, and connected solutions that can track usage to support viability and provide lighting on demand could minimise some negative impacts from lighting, although these should be evaluated in terms of their contribution to safety and perceived safety
- lighting that can support perceptions of safety, particularly for women and girls and can also be used to provide clarity for wayfinding of a route, such as in Figure 14-21
- avoiding dark spots and shadows — lighting should be consistent, and not result in long stretches of darkness
- a broad spread of light at user level that can support perceptions of safety, which may be achieved by reflective surfaces as well as lighting
- consider how any path lighting may affect different user types, particularly at transition points between on-highway and off-highway routes, so as to ensure that motorists do not misinterpret path lighting as related to the carriageway
- maintenance plans — vegetation growth must be routinely managed to ensure usability and broken fixtures replaced promptly and in keeping with the overall scheme

Figure 14-21: Solar stud lighting on the motor-traffic-free St Peter's Greenway, Buckinghamshire.



14.10 Maintenance

Responsibilities and funding

It is crucial that routes are well maintained to meet project objectives and sustain high levels of use into the future. Well maintained areas are also important in enhancing feelings of safety.

When developing rural active travel routes, maintenance should be considered early in the design process, as design decisions greatly impact the level of ongoing maintenance required. Determining responsibilities for the funding of inspections and maintenance should be an integral part of the development of the scheme.

The maintenance liability for a new path would normally rest with the contractor throughout a defects period. The period of responsibility is typically 12 months and should be defined within the construction contract. Beyond that the client should have clear maintenance arrangements in place.

Routes that form part of the highway are generally included within the local authority highways maintenance regimes, but other PRow may have much more variable arrangements. It is particularly important to establish maintenance responsibility for routes that are outside of the highway boundary.

Landowners have a legal duty to keep rights of way free from obstruction. Agreements need to be in place with all landowners in relation to structures, fences, gates and other access furniture.

Volunteer groups can be helpful in managing and maintaining a route, particularly if it does not form part of the highway and so is not included in the local authority maintenance regime. Local authorities are encouraged to consider working with local groups who can help with these activities.

Early engagement with rights of way or countryside management teams could help to identify any potential local volunteers.

A maintenance plan should be prepared that includes activities such as seasonal leaf clearance, gritting, snow and ice clearance, cutting verges, cutting back overhanging and encroaching vegetation, tree work, path sweeping, defect repair, drain and ditch clearance and litter picking.

Older and historic structures are likely to require more intensive maintenance, which should be guided by a regular inspection regime undertaken by specialists. Routes incorporating such features may need suitable funding streams in place to undertake inspections and routine maintenance, and for longer-term interventions such as major refurbishment or end-of-life replacement as required. Responsibilities for the maintenance of structures must be understood and/or agreed well ahead of route construction.

A maintenance hierarchy can be used to prioritise resource allocation and service delivery towards routes and locations of greatest need and/or strategic importance.

The UK Roads Liaison Group (UKRLG) produced updated guidance in 2018 on a [risk-based approach to maintenance management of footways and cycleways](#). This guidance supports its '[Well Managed Highway Infrastructure](#)' code of practice.

Regular maintenance

Table 15-1 in LTN 1/20 provides a useful guide to the typical maintenance requirements for motor-traffic free routes, including guidance around the frequency and timing of various activities. This is applicable to walking, wheeling and cycling routes in rural areas.

The management of vegetation is an important consideration on rural active travel routes, both during the design and operational phases. A route can become unattractive and difficult, or even impossible to use if vegetation becomes overgrown, impacting accessibility.

Figure 14-22: Management of vegetation is important for maintaining views and opportunities to experience the wider landscape.



Maintenance regimes should ensure that routes are kept clear of encroaching vegetation. This will allow natural light to fall onto the path, helping to enhance its ecological value and enabling attractive plants and flowers to grow. New growth should be cut back before it reduces the usable path width and impacts on sightlines, especially at pinch points and accesses. Seasonal leaf clearance should be carried out promptly.

Path surfaces should be checked regularly for root damage, with repair options built into maintenance plans. Tree pruning may be required to help keep the route safe and attractive, while also helping to maintain a sense of personal security. Works may also be required to maintain viewpoints.

Vegetation clearance work should be undertaken outside the bird nesting season, which in general runs from February to the end of August. An ecologist should be involved in the early stages of any route development and will be able to advise on the most appropriate scheduling of maintenance activities.

Unbound surfaces will require more regular maintenance than bound surfaces, particularly on steeper gradients. They can degrade quickly due to wear and tear, erosion and vegetation encroachment.

Routes may need to be swept to clear leaf and other debris (soil, sand, stones) that has fallen or been washed onto the path in areas prone to flooding.

Additional maintenance activities may be required once flood water has subsided to clear mud and other debris from routes.

Arrangements need to be made for litter and dog waste bins to be emptied frequently, and for litter to be cleared along routes before it is blown or washed away from the route.

Additional winter maintenance to prevent ice forming is desirable but may not always be possible. The management of surface water can minimise this issue but cannot eliminate it. Priority routes should be identified with consideration of their function, the volume of users and other factors such as gradients and proximity to hazards that could make a slip or fall more serious.

Maintenance of features along a route should also be programmed, including the cleaning and repair of benches, wayfinding elements, signs and any access control bollards or boundary features such as fences.

Maintenance access

Maintenance access requirements should be considered during the planning and design stage, including lighting, waste collection and vegetation clearance. Access points may need to be designed to accommodate maintenance vehicles, including their turning requirements. If motor vehicle access is anticipated, then the frequency of visits and subsequent loadings must be factored into the pavement design.

Keeping paths open during maintenance activities work should be prioritised. However, if this is not possible and the nature of the works requires closure of a route, this should be for the shortest period of time possible. Route closure should be well communicated to all users with advanced notice and suitable signing and wayfinding. A signed diversion route should be provided, with advance information provided on any aspect of the diversion route which may not be accessible to all route users.



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Published case studies and the latest version of the Rural Design Guide can be found on [GOV.UK](https://www.gov.uk)

Appendix A – Options for route creation and improvement

Introduction

This Appendix summarises the key considerations associated with the principal options for creating or improving active travel routes.

Further information on the relevant legal framework is given in Appendix B.

A helpful toolkit for local authorities on how to successfully engage with landowners to deliver active travel routes has been produced by [Bare Analysis](#), available for [download](#).

Approaches available

New and improved active travel routes can be delivered through upgrading an existing highway or creating a new right of way for the public to use. The following approaches are available to local authorities:

- dedication as a Right of Way
- permissive path
- express dedication under common law
- modifying an existing right of way

Dedication as a right of way

A route can be dedicated as a right of way by a landowner entering into a creation agreement with the highway authority; or through a creation order, where local authorities create any type of right of way, either directly onto privately owned land or following acquisition through Compulsory Purchase. The Secretary of State needs to confirm the order if there are objections.

Dedication affords permanent rights for the public over land, as well as defined rights and responsibilities for landowners and the highway authority to maintain routes.

Provided there are no surface defects, any conflict/liability is between users rather than the highway authority.

Permissive path

Landowners can allow the public to gain access across their land by establishing a permissive path, with the width and standard of the route agreed with the highway authority. Permissive paths can be particularly useful to trial access if landowners have concerns about allowing permanent access to their land.

While payment for land access may be appropriate, it may be more complex to agree a suitable value for a temporary route.

Permissive paths can be delivered quickly and give greater flexibility for any potential changes. However, there may be greater responsibilities on the access provider, and the rights for the public to use the path may be removed at any time.

Provided there are no surface defects, any conflict/liability is between users rather than the landowner.

Express dedication under common law

Express dedication under common law by the freeholder of the land allows the creation of a right of way, in perpetuity, for use by the public.

The local authority does not need to be party to the dedication. The highway authority may record the route on the Definitive Map.

Express dedication may offer a quicker route to creation and less requirement for involvement with the authority for the route creation. The main disadvantage to landowners is that the responsibility for maintenance remains with them. This can be a disincentive, and therefore careful and cooperative engagement is needed to understand a landowner's concerns and priorities.

A further option is that as part of the process a new landowner, typically a charity or community group, takes ownership of the land, relieving the landowner of the responsibility for maintenance.

Modifying an existing right of way

Modification of a right of way is possible where there is already a level of public access and a proposal can be developed that improves the route and/or adds to the permitted types of users.

This process can also reduce the maintenance burden or impact on landowners (for example, by diverting the route to a field edge and upgrading surfacing and/or fencing).

Principles for Land Assembly

The following principles should be followed when engaging with landowners:

- use local knowledge to establish the best way to approach landowners – for example, through mutual contacts such as parish councillors. Consider the use of engagement specialists if the necessary skills and knowledge are not available within the authority
- understand the landowners' perspective and what the successful operation of their land incorporating an active travel route would be like
- be flexible over the precise details of the scheme, including the alignment of the route itself. Explore all options for the delivery of the route to determine the best option for both the community and the landowner(s)
- listen, and understand what wider benefits could be delivered in terms of land access, land and livestock security, and the management of any existing public rights across land
- emphasise the wider community benefits that the new or improved route would bring, including improved safety
- use of Compulsory Purchase as a last resort if a negotiated agreement is unlikely to be achievable. Engage expert advice if a Compulsory Purchase is thought to be required

Appendix B – Acquiring land and rights

Introduction

This Appendix summarises the legal framework associated with the creation and improvement of active travel routes. It is recommended that suitable legal advice is obtained prior to the commencement of any statutory process.

Key statutes

A summary of the key statutes relevant to the development of active travel routes is given below:

- **Highways Act 1980**
 - **S14/24.** Enables side road orders which can include alteration or creation of a new highway
 - **S25/26.** Enables the creation of bridleways, footpaths or restricted byways through a path creation order
 - **S30.** Enables a parish or community to enter into an agreement to create a public path
 - **S36.** Defines highway maintainable at public expense (HMPE), noting that some highways are not HMPE
 - **S37/38.** Agreements to dedicate land to the highway authority. In some instances, dedication could offer a simpler and cheaper process than land purchase
 - **S65.** Powers to create, alter or remove a cycle track. May not need works but should be consulted on
 - **S66.** Powers to remove footways (which could be relevant when converting a footway to a cycle track)
 - **S228.** Process in which unregistered land can be adopted as highway, which requires onsite notices
 - **S278.** Agreement for works by a third party (for example, a developer) within the highway
 - **S329.** Defines bridleways and footpaths as highways
- **Transport and Works Act 1992**
 - Orders (and development consent orders under the Planning Act 2008) may include the creation of footpaths, bridleways or restricted byways
- **Cycle Tracks Act 1984**
 - An authority may designate any footpath that is part of the highway as a cycle track. This does not require planning consent, although any widening and/or acquisition of land outside the highway may do so
- **Town and Country Planning Act 1990**
 - **S55.** Powers to maintain and improve highways without needing planning consent (see below)
- **Road Traffic Regulation Act 1984**
 - **S1.** Powers to make Traffic Regulation Orders. This includes changes to permitted types of traffic and speed limits, that may improve the suitability of a route for active travel
 - **S9.** Powers to make experimental traffic regulations orders, valid for up to 18 months (extendable to 24 months if being made permanent)
 - **S63.** Powers to provide vehicle and cycle parking
- **Countryside Act 1968**
 - **S30.** Gives the right to ride a bicycle on any bridleway, but no obligation to improve the surface

Planning consents and permitted development

Section 55 of the Town and Country Planning Act (TCPA) 1990 sets out the meaning of ‘development’, along with land uses that are not considered to involve ‘development’.

Of particular relevance is Section 55(2)(b), which states that works by the highway authority within the boundaries of a road that is required for the maintenance or improvement of the road is not considered to be ‘development’ and would not require planning permission. (Land outside but adjoining the highway boundary is covered under permitted development rights – see below.)

However, if the highway authority works are not exclusively for the maintenance of the road (for example, if the works are for improvement, such as providing a new active travel route), then it would be considered ‘development’ should there be any significant adverse effects on the environment.

If a proposed land use constitutes ‘development’ under the TCPA 1990, it is often possible to deliver part or all of an active travel route without the need for planning permission, using permitted development rights.

Using permitted development rights

Permitted development rights under the Town and Country Planning (General Permitted Development) (England) Order (GPDO) 2015 typically apply for works undertaken by the highway authority on land within or ‘outside but adjoining’ the adopted highway (Part 9 Class A of the GPDO 2015).

This can include land on or adjoining existing restricted byways, byways open to all traffic, bridleways or footpaths. Other parts of the GPDO 2015 may be applicable for active travel routes and each proposal should be reviewed on its merits.

It is recommended that the use of permitted development rights is discussed early with the applicable local planning authority (LPA).

A request to the LPA for a screening opinion under the Town and Country Planning (Environmental Impact Assessment) (EIA) Regulations 2017 may be required for active travel routes, subject to their character, location, and potential impacts. If the LPA considers the proposal to be EIA development, then permitted development rights would not apply and planning permission may be required.

Development using permitted development rights (or otherwise) should consider the location of construction phase compounds. If a compound does not adjoin the development area, then it may require a separate planning consent.

An application for a Certificate of Lawful Development Certificate, issued by the LPA, may be appropriate to formally document that permitted development rights have been applied correctly.

Planning applications

If permitted development rights do not apply, a planning application under the TCPA 1990 is likely to be required. The requirement for this should be discussed with the applicable LPA.

Where part(s), but not all, of the route require planning consent, it is recommended to provide a description of the entire route within the planning application submission.

Other methods for achieving planning consent may be available. For example, the inclusion of active travel routes within planning applications for larger developments, or through infrastructure development consent orders.

Other consents

Table B.1 below provides an overview of other consents that may be required to either satisfy planning requirements or other legislation relevant to the works proposed. Where these may apply, it is advisable to seek expert advice at an early stage.

Table B.1 – Summary of other possible consents

Consent	Comments
Common land or town/village greens	Works to create a traffic-free route across common land or a town or village green is likely to require consent and may not be permitted in certain circumstances. Advice should be sought from the relevant Commons Registration Authority.
Conservation areas	Permission may be required from the LPA to make changes within a Conservation Area, even if they do not require planning permission. This may include works to trees (defined as having a trunk more than 75mm in diameter), or changes to structures. Works to trees by or on behalf of a statutory undertaker as set out in Town and Country Planning (Tree Preservation) (England) Regulations 2012 are likely to be permitted. Potential works should be discussed with the LPA conservation officer.
Ecological licences	Licences and permissions may be required from Natural England and other bodies in relation to managing impacts on protected species or habitats such as sites of special scientific interest, special protection areas, special areas of conservation, or Ramsar sites. Additionally, hedgerow trees are protected under both the Hedgerow Regulations 1997 and the Management of Hedgerows (England) Regulations 2024. If any part of the hedgerow on certain land use types, including any trees growing within the hedgerow, are to be removed, a felling licence or permission from the LPA, or both, may be needed. The Forestry Commission's Tree Felling Guidance provides more details.
Environmental permit – main rivers and flood zones	Development that is on or near a main river, flood defence structure, or in a flood zone is regulated under the Environmental Permitting (England and Wales) Regulations 2016. There are a number of excluded activities which do not need permission, and standard exemptions can be registered for common works. Reference should be made to the Environment Agency, lead local flood authority, or internal drainage board.
Designated heritage assets consents	Listed buildings may include the structure itself and any items or structures attached to it or within its curtilage. Listed buildings and scheduled monuments have separate consenting processes. Details of these designated heritage assets can be obtained from the National Heritage List for England online. To understand the requirements for designated heritage assets, proposals should be discussed with the LPA archaeological advisor or conservation officer and, for high-value designations, Historic England.
Ordinary watercourse consent	Development affecting ordinary watercourses may require land drainage consent or ordinary watercourse consent from a local authority or internal drainage board under the Land Drainage Act 1991.
Tree preservation order (TPO)	Trees subject to a TPO will likely require consent to be felled or significantly altered under the TCPA 1990 and the Town and Country Planning (Tree Preservation) (England) Regulations 2012. Statutory undertakers also have rights for development under permitted development rights, including within conservation areas. This should be confirmed with the applicable LPA.
Highway works consents	Works within the highway will require the relevant permissions, as with any works within the highway. Street works licences and permissions to alter statutory undertaker apparatus are covered under the New Roads and Street Works Act 1991.

Appendix C – The Rural Delivery Routemap (RDR)

The RDR is split into two parts: the first focused on deriving clear and measurable objectives, and the second on developing the optimal proposal. These are to be conducted alongside the development of the scheme design following guidance set out in the rest of this document. Early-stage analysis and development of alternative options can reduce the need for costly changes that threaten the delivery of the scheme at a later stage.

The RDR references a number of external documents such as those from the DfT (such as the [transport analysis guidance process](#) and [LCWIP guidance](#)), complementary ATE guidance, tools and audit methods, as well as those not exclusively related to transport such as the [HM Treasury business case guidance for projects](#). The RDR is intended to combine such guidance and provide cohesive outputs to feed into a supporting LCWIP or business case for the proposal.

A principal theme throughout the RDR process is the need to future-proof any route to ensure that it not only meets the needs of present-day users, but also those in years to come.

Figure 1 overleaf outlines the process of the RDR, which is explained in further detail throughout this appendix.

This appendix ends with some worked examples of how various steps may be applied in practice.

Rural Delivery Routemap

The initial stage of any rural scheme is to consider the space in which the scheme will sit, and what journeys it will enable:

Objective setting

Project Stage	Description	Suggested data inputs, and tools
Project level: Inception		
A	Define the geographical area and overarching policy basis and case for change for considering intervention. Note: <i>Step 1 and Gateway 0 from the HM Treasury Five Case Model – there should be clear understanding of how the intervention would fit with other projects and programmes within the strategic portfolio as well as understanding of the governance structure and approvals required.</i>	What is the overarching policy agenda? What have the local actors said of the area? What is the initial understanding of issues?

Having established why such a route is important, understanding the current context of the route is key:

Project level: Background and scoping. Understanding the 'business as usual'.		
<i>Project stage B: Review of existing context</i>		
B1	Review existing arrangements – map or list existing routes, paths and infrastructure both on and off highway.	PRoW, NCN, regional/local routes and paths, crossings, using the ATE Scheme Sketcher tool.
B2	Review settlements, land use, points of interest, key trip attractors and forthcoming development sites.	OS data pertaining to named settlements and built-up areas, Local Plan allocated sites, SHLAA.
B3	Produce a high-level overview of geographic and environmental conditions which may be influential.	Flood risk land data from DEFRA, waterways protected habitats, wildlife, arboriculture, etc.
B4	Review the historic features, local assets and heritage landscape of the greater study area.	Historic England listed sites, buildings and scheduled monuments.
<i>Project stage C: Policy and influential actors</i>		
C1	Review adopted and forthcoming policies, plans and strategies.	Review draft and published local and regional policy and associated plans, LCWIPs.
C2	Produce a high-level overview of stakeholder groups and key actors and note relevant requests received.	Walking, cycling, horseriding and outdoor pursuits in the area.
<i>Project stage D: People and travel patterns</i>		
D1	Produce a demographic profile for the study area.	Census, ONS, regional and local statistics and surveys, age, employment, public health, IMD.
D2	Review existing travel patterns and behaviours, car ownership, home working practices and leisure trips.	National Travel Survey, Census, PCT tool, ATE Scheme Sketcher tool, place-based carbon calculator.
D3	Consider future transport-related problems. Define the future 'without scheme' case and potential scenarios around this.	Population and multi-modal traffic predictions using TEMPro.

Project Stage	Description	Suggested data inputs, and tools
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This will provide an holistic understanding of the context which enables a more detailed analysis of to whom the benefits will accrue. This should be considered against the work in the following stage of the user groups expected to utilise and benefit from any intervention:

Project level: Strategic assessment.		
Project stage E: Identifying key user groups.		
E	Understanding to whom the benefits will be of value is the key to identifying benefit and then shaping the proposal. These will be referred to as Key Users. <i>Key things to consider from Stages C and D:</i> - what policy aims could be advanced through development of the rural active travel network in the area? e.g. improving safe and accessible routes to schools or reducing social isolation - is the area known to be well-used by equestrians? - are there existing leisure and tourism trips? - what key desire lines are currently underutilised by active modes and if this impacts a specific groups of users? - a draft vision of the objectives should be completed at this stage	For the purposes of later drafting of a business case, it may be worth thinking of primary beneficiaries in the terms outlined within TAG. These include: - individuals on low income - children below 16 - young adults (16–25) - older people (70+) - disabled people - black and minority ethnic people - households without access to a car - households with dependent children
Project stage F: Appraisal of existing content.		
F1	Building on from Step B1: appraise the quality of existing provision and note gaps. Mark down inaccessible and sub-standard sections.	Conduct desk-based and on-site audits appraising Step B1 list against best practice guidance/standards. Review typologies from LCWIP guidance.
F2	Building on from Step B2: focusing on the Key Users conduct network planning analysis to draw out key desire lines to focus on.	Follow the principles set out in Stages C and D of the LCWIP Technical Guidance for LAs.
F3	Building on from Step B3: produce a high-level overview of geographic and environmental conditions which may be influential.	Consider appraising with TAG Biodiversity, Landscape & Water Environment Impacts worksheets using information available.
F4	Building on from Step B4: appraise the individual and collective significance of historical assets and their importance to the area.	Consider appraising with TAG Biodiversity, Landscape & Water Environment Impacts worksheets using information available.

Project Stage	Description	Suggested data inputs, and tools
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Building on that understanding, this is where it becomes clear what the benefits of investment would be, e.g. a new route will enable new trips, whilst improving the lighting and surfacing of an existing route will increase the range the user types able to use it.

Project level: Defining objectives.

Project stage G: Collate findings and appraise.

G	Aggregate findings from previous Stages and assess the potential benefits, risks, constraints, and dependencies of developing the active travel offering. Examples of things to consider from Stage F: • in what way could the proposal contribute to local economic growth? • can the features appraised be considered as risks or constraints or can they be considered as opportunities for enhancement to expand potential users of any intervention? • are the inter-dependencies which limit the feasibility of any intervention? • could the enhancement of specific features, assets or existing routes or infrastructure contribute to tangible benefit to the identified key user groups? You should now have put together a robust 'case for change'.	This appendix offers guidance on how features appraised in Stage G can be developed into objectives for the schemes and how they can be enhanced into new potential benefits. For example, for the local economy, further supporting the case for the proposed route or intervention.
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Project stage H: Finalise objectives.

H	The intention of the objectives is to guide the proposal to on that delivers the most benefit given the analysis of existing conditions and potential for improvement. They are intended to inform optioneering and subsequent planning and design decisions. However, they are dynamic and can and should be revisited, and potentially updated, throughout the process. <i>Examples of things to consider:</i> • what is required to close the gap between where we are now (existing arrangements) and where we need to be in the future? • what do we want to deliver for Key Users or to advance policy goals (such as decarbonisation)? <i>Objectives should be:</i> • aligned with local authority policies and strategies • Specific, Measurable, Achievable, Relevant, Time-constrained • outcome-focused and not tied to specific solutions	Further advice on this process can be taken from Chapter 5 of the HM Treasury 'Guide to Developing the Project of Business Case'.
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Completion of the stages outlined under 'objective setting' should provide sufficient material to fulfil requirements for the 'strategic outline and business case' and allow you to proceed with drafting potential options for intervention.

Optioneering

Project Stage	Description	Suggested data inputs, and tools
Project level: Determining scheme type		
I	Determine whether the proposal is to be an area-based scheme (linking with a place) or a network-based scheme (linking between places) and also whether it is complex or non-complex. Note: <i>Appraisal should be proportionate to the scale of the scheme proposed. Simple schemes with a single, obvious solution to a non-complex problem, will require a much lighter-touch appraisal process with far fewer options considered. Note that network-based schemes will inherently be more complex than area-based schemes, even if they only include a single link.</i>	Use the findings from Stage B–F to determine complexity. Multiple interventions inherently create greater complexity than single interventions.

Area-based and network-based schemes will require different considerations. See the ATE Design and Review tools for more information.

Project level: Developing initial options – route network. Building on from Step H.		
<i>Stage J: Route alignment.</i>		
J1	Assess which of the listed routes fit the assessed desire lines given the objectives. There may be a few potential options.	Consider the typologies within the LCWIP guidance and assess the importance of directness of the route.
J2	Determine whether the route alignment(s) can be adapted to add value such as linking further points of interest.	Consider the importance of route directness and whether it is worth deviating to link to further places.
J3	Establish if there is a need to develop new routes beyond the existing path and road network.	Consider any potential constraints as well as opportunities and latent demand and desire lines.
J4	Compile a shortlist of route alignments including any potential new routes or links. Refer to the LCWIP guidance 'Route Selection process' (Figure 9).	Each should be suitable for the Key Users (following adaptation) and consider the stated objectives.
<i>Stage K: Feasibility assessment.</i>		
K1	Conduct feasibility studies for the potential routes. Gather further survey data in locations/issues of key importance.	Focus on specific requirements, e.g. ecology assessments or traffic data depending on route requirements.
K2	With each of the potential route options, consider what design interventions may be required to make them suitable for objectives.	Refer to Table 4-1 in Chapter 4 and consider Key User needs to develop at least one option of each alignment.
K3	Create options for each different route alignment with different levels/qualities of infrastructure, following guidance specifications.	It may be the case that a less engineered solution suitably satisfies Key User needs and the objectives. Some options may just include an upgraded junction for example.
K4	Establish a 'Do Minimum' option. For the preferred alignment, consider what is the minimum possible intervention.	Using this and the already established 'Business as Usual' should build a strong case for better quality infrastructure. This may simply be changing status.
You should now have a 'Preferred Way Forward'.		

Project Stage	Description	Suggested data inputs, and tools
Project level: Multi-criteria assessment (MCA). <i>The overarching aim of multi-criteria assessment is to what extent the issue at hand and associated objectives can be addressed by the outlined intervention options.</i>		
Stage L: Building the appraisal framework.		
L1	Build a multi-criteria scoring matrix, taking reference from the DfT EAST tool and HM Treasury 'Options Framework'.	Conduct desk-based and on-site audits appraising Step B1 list against best-practice guidance/standards. Review road typologies in LCWIP guidance.
L2	Select what is to be appraised within the Framework based on the objectives of the scheme and any fundraising constraints.	This should include a mixture of practical/feasibility considerations and overall alignment with objectives.
L3	Establish scoring criteria which assesses an options' strategic fit, value for money, financial feasibility and deliverability.	Refer to TAG guidance. Land and environmental consents and high-level costings should be considered.
L4	Determine how each criteria will be appraised. Consider scaled scoring categories and any weightings to be applied.	If completing a business case, this methodology should be critiqued in the Appraisal Specification Report.
L5	If multiple interventions or routes are intended to be funded then options may be presented as packages of measures.	Think about which routes/measures are most complementary to one another or have linked benefits.
Stage M: The short-listing process.		
M	To complete the MCA scoring exercise, technical input and scheme-specific knowledge from several actors will likely be required. An overall score should be derived for each option with the highest score(s) representing the most suitable option(s). If engineers or designers are not already involved in the proposal, it is recommended that concept designs are now drafted for the highest-scoring option(s) as well as a select number of additional 'shortlist' options. The final option(s) from the shortlist is/are then chosen following a process of: - identifying and evaluating any further delivery complexities or costs through developing designs. This includes updating the cost estimated and risk registers to accurately reflect each option - conducting extensive engagement to gain feedback on the shortlisted options, particularly considering the preferences of the identified Key Users - if a business case is to be prepared, an economic appraisal of costs and benefits for each shortlist option will determine the final option(s) to pursue	Much data will likely need to be gathered and analysed to input into the MCA scoring process. Sources could include: - DfT 'Route Selection Tool' - exploring indicative uplifts using the ATE Uplift tool - census or travel surveys - collisions data - traffic/ATC/JTC data - various audit tools such as: Walking Route Audit tool, Healthy Streets Assessment With the shortlist, reference may be drawn from Step 4 of the HM Treasury Guide to Developing the Project Business Case. - undertaking benefits appraisal - undertaking risk appraisal - undertaking sensitivity tests

Project Stage	Description	Suggested data inputs, and tools
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This will result in a robust analysis of the options and provide a clear preferred approach to delivering active travel improvements in line with the objectives.

Project level: Developing the offering. *At this stage, preliminary or detailed designs are likely being progressed for the selected option(s).*

Stage N: Complimentary features.

N1	Consider adding practical features to the proposed design e.g. benches, wayfinding, cycle parking, toilets, showers, lockers.	Conduct sensitivity testing for the additional features in the ATE Uplift tool and AMAT and sought within Healthy Streets guidance.
N2	Consider building up a network of ancillary services e.g. cycle hire facilities and further food and drink and accommodation offering.	Existing local businesses could also be supported to adapt to increased cyclist, walker and tourist numbers.
N3	Are there elements of the travelling landscape which could be added to enhance overall appeal? (See chapter 13.)	Art installations, bike repair stations, information boards, environmental enhancements, play features, etc.
N4	Develop supporting strategies for benefits realisation such as comms/engagement or marketing for the route/upgrades.	See chapter 11 for guidance on maximising potential usership of the route, supporting value-for-money.

Even if a business case is not required, give considerations to finalising the ‘strategic’ and ‘economic’ case for the scheme and light-touch elements of the ‘commercial’, ‘management’ and ‘financial’ cases to have the proposal ready for final approval.

Stage O: Progressing to scheme delivery.

O1	Make contact with any key delivery partners e.g. land owners, identified suppliers and businesses.	- if conducting a business case, advance the commercial, management and financial cases with expert support - revisit the TAG worksheets completed as part of initial baseline assessment to fully ascertain the benefits created by the proposal - consider a targeted engagement strategy to persuade different groups of the scheme benefits and ensure delivery success
O1	Consider how the proposal can have knock-on benefits on the local economy such as through regeneration effects.	
O3	If required, conduct final assessments such as using TAG worksheets to ascertain carbon savings and other benefits.	
O4	Produce a targeted engagement strategy to gain support of different stakeholders, permitting the scheme to be approved.	

Further detail on all of these stages is provided below.

Inception

Prior to commencing any baseline work, an initial step, consistent with the HM Treasury business case guidance for projects 'Stage 0', should ideally be undertaken. This involves:

- defining the geographical area for the scheme. This should be broad and unbiased and can be narrowed at a later stage of the process
- awareness of all policy applicable to the study area and any established programme under which the scheme may fall, such as an LCWIP or a Safe Travel to School scheme
- understanding the layers of governance at play in the study area and identifying key stakeholders whose approval will be required to deliver the scheme

It is advisable to create a governance structure, as suggested in the LCWIP guidance, and establish a core project team. Project board members should include those whose consent and input will be required at various stages of the project delivery cycle.

Planning permission may be required for the scheme, which varies by local authority. Planning permission should be checked and if it is required, it will need to strongly align with policy as well as additional, in-depth surveys and outputs to submit.

Background and scoping

Understanding the existing context and active travel landscape relevant to the scheme is key. This should include, but not be limited to, information on the route typology, geography, built environment, land use, development sites, landmarks or economic assets.

Potential constraints should also be considered visually, such as any controls on development or design in the area that are imposed by conservation areas or have similar protections and designations. Other obvious landscape characteristics such as watercourses and woodland may influence route alignment or feasibility of different types of intervention.

The understanding of the study area will be key to the planning and scoping of network-based schemes. PRow are part of the highway network and will appear, along with the road network, on definitive maps kept in each county or unitary council office, with many now available online. Cycle tracks and unsealed, unclassified country roads are generally shown as other routes with public access (ORPA) and are also legally part of the highway, but are listed on the 'List of highways maintainable at public expense' and 'Street Works Register' rather than on the definitive map. These can generally be seen on Ordnance Survey (OS) maps.

Permissive paths are shown in orange on 1:25000-scale OS maps. An example of a permissive route is the Forest Trail network, found in most Forestry Commission woodlands.

There are various sources of information about permissive routes, some of which will be known to the local highway authority, but in most cases it will be necessary to obtain full details directly from the landowners concerned.

Gap analysis

As is shown in the RDR, initial scoping can follow the general themes of:

- **place:** land use and built and natural environment features
- **policy:** understanding relevant policy and local agendas for the area
- **people:** examining demographic data and the movement of people into, out of and within the area

Key resources for initial background and scoping exercises will be publicly available datasets and local authority documentation, as well as existing knowledge of the study area from within the project team. An existing ‘agenda for the area’ can be drawn from local or strategic policy or plans. The area may be presided over informally by local interest groups or formally by organisations such as the Walk Wheel Cycle Trust, Canal & River Trust or private landowners who maintain existing paths in the area.

At each stage, the RDR includes suggestions for various data sources in green. These data sources are freely available online, meaning baseline analysis should be feasible without additional cost or outsourcing. In rural areas, datasets including those available from public bodies, such as Historic England and the Environment Agency, will also be important in understanding the historic and natural landscape of the wider study area and determining what types of intervention may not be possible in certain locations.

A more exhaustive list is given in Chapter 4 (Figure 6) of the LCWIP guidance.

When conducting a demographic review, it may be worth considering themes discussed within Chapter 2 – including how active travel can impact physical health, mental health and wellbeing, civic participation and local employment.

Consideration also needs to be given to the effects on all groups with protected characteristics under the Equality Act 2010.

Templates for different types of scoping exercises could be adapted from [existing TAG worksheets](#) as well as guidance set out within [TAG unit A3, environmental impact appraisal](#). If a business case is required, this background work will directly feed into appendix documents attached with the final submission. Worksheets are available on the topics of relevance to rural schemes:

- **landscape** (high potential relevance)
- **townscape** (moderate potential relevance to place-based schemes)
- **noise** (high potential relevance to inter-settlement schemes on or adjacent to busy roads)
- **historic environment** (high potential relevance)
- **water environment** (high potential relevance)
- **biodiversity** (high potential relevance to inter-settlement schemes)
- **air quality/greenhouse gases** (low potential relevance)

Where a topic has been identified through initial scoping as being of particular significance to the area, further data may be required at a later stage. This could include the commissioning of ecological surveys or traffic surveys. It is not recommended that additional data is obtained until the optioneering stage.

It will also be important to identify ‘sources of expertise’ which will be able to advise on critical areas throughout the RDR process. These may include officers within the local authority, regional/mayoral authority or highway authority, as well as people within parish, town and district councils and key stakeholder groups, with attention paid to under-represented groups and those who are not current users.

Once the existing geographic and policy context has been appropriately considered, the existing and future movement of people within the study area should be examined. The data sources suggested within stage C of the RDR provide a good starting point for extracting demographic statistics and creating a high-level overview of travel patterns and modal choice in the area. Care should be taken in selecting datasets to ensure they are representative of the population and the range of journey purposes. For example, Census-origin destination data and data derived from this is primarily concerned with commuting trips, which will only account for a small number of potential users of a route.

In rural areas, where there may not be such obvious or robust evidence of demand, there is merit in following a process that considers the strategic and economic case for investment throughout the whole planning and design process.

Strategic assessment

Once initial background information and a general understanding of the area context have been gathered, a more thorough assessment is required to derive specific, measurable objectives for the scheme.

Identifying key user groups to guide objectives and design

From the initial background and scoping, it should be possible to identify a targeted type of user whose movement is a central focus of the project, termed 'Key Users'. The work conducted on the theme of 'People' will be of particular importance to this. The Key Users can be as many or as few groups of users as desired. Key Users are not the only users of the route – they are an identified target group whose ability to access and desire to use the route are paramount to the success of the proposal.

Their needs should therefore be a central focus of the subsequent design stages of the scheme. For example, equestrians may be assigned a Key User if a route is to encompass sections of existing bridleway well used by horse riders.

Key User groups may come directly from the policy review conducted. Further to this, the initial ideation and background-scoping exercises will have identified specific groups who would most benefit from a new active travel route or intervention. These may include commuters or school pupils travelling along a specific desire line, women and girls who currently lack safe routes locally, or groups whose general accessibility is poor in the area, such as households without access to a car or those that face restrictions due to disability, age or income.

When discussing Key Users in a business case, it may be advantageous to consider socio-economic groups as defined within TAG to retain consistent terminology. These would be supplementary to broader categories such as commuters or tourists. These are listed as:

Discussions around the distribution of benefits may also be pertinent when considering Key Users for the scheme and overall social benefit. These are included in TAG unit A4-1, A4-2 and A4-3.

The Key Users requirements should serve as a constant reference point when shaping and designing any scheme and when following the guidance within this document. It is recommended that even simple schemes give high-level consideration to the potential Key Users of a scheme to avoid late-stage amendments to the scheme design.

The list of potential stakeholders and important actors should be updated based on the identification of Key Users.

Appraisal of existing conditions

As is indicated in the RDR process diagram, it is recommended that information gathered as part of the initial background and scoping should be subject to in-depth appraisal (relating to the themes of place, policy and people), applying particular scrutiny in relation to the needs of Key Users.

Again, TAG environmental impacts worksheets may provide a useful framework for high-level scoring of the quality of existing routes or nodes. They may help to understand whether features or characteristics identified in Stage A, B or C are potential barriers, strengths, weaknesses and opportunity areas.

Components of DfT tools such as the [Walking Route Audit Tool](#) and [Route Selection Tool](#) could be used to create review criteria, such as surface quality and condition and inclusive design features, as well as reviewing best-practice design guidance. However, full baseline audits are not recommended at this stage.

Visualisation of existing traffic-free and on-road routes will help in identifying missing links in a network. If required, mesh density analysis, detailed in LTN 1/20, can be used to determine overarching gaps in provision across the study area.

For route network proposals rather than place-based schemes, Chapter 5 (stages C and D) of the LCWIP guidance can be followed to obtain more robust desire lines.

However, as discussed in Chapter 2, in rural areas it may be harder to ascertain latent demand and desire lines following the method outlined in the LCWIP guidance. This is particularly if utility trips may comprise a smaller share of overall expected use of the route.

Obtaining data likely to include leisure trips, such as from mobile network data, Strava Metro, TomTom or from on-site counters or surveys, is particularly important in rural areas.

For utility trips in rural areas, instead of considering areas where walking and cycling levels are already relatively high, high levels of single-occupancy car travel should be focused on. This may point to areas unserved by public transport networks, where access to train stations is poor and rural bus services are limited, as well as poor existing active travel connectivity. Attention should also be paid to journey types other than commuting.

Defining objectives

Objective setting is an essential requirement of any scheme of any type, whether large or small, complex or clearly defined. Objectives do not need to be overly ambitious, but they should be achievable, given what is now known of the study area.

At the end of Stage E, key locations to connect should be identified and potentially feasible routes or interventions between these points should be highlighted. The potential to enhance existing strengths or overcome assessed barriers to implementation should be well thought out.

At this stage it is important to retain flexibility in any route choice, particularly where a route or parts of a route may need to cross land which is within 3rd party ownership. A firm understanding should be drawn of the 'business as usual' scenario and what is required or what challenges need to be overcome, to arrive at the desired solution. If a business case is required, demonstrating a full appreciation of the 'business as usual' and making a case for change, are central themes throughout.

From the completion of the previous Steps, objectives should emerge which align with the findings. In addition to objectives aligning with national and sub-national active travel targets, as is required in the LCWIP process, objectives could also centre on economic, environmental or social themes, as discussed in great depth within DfT Transport Appraisal Guidance.

Having clearly defined objectives is key to maximising the social benefits of a scheme and ensuring the project remains aligned with local policy. Defined objectives are also a crucial focus of any funding bid. Having strong, scheme-specific and outcome-focussed objectives are also of great significance to the subsequent optioneering process and ensuring that the selected route or intervention is honed so as to best achieve the desired outcomes and maximises value for money.

It may be beneficial to host a meeting with stakeholders and the wider project team to agree on objectives before proceeding to the Optioneering stage.

It should be noted that the specific details of each objective are not static and could be shaped as the planning and design of the project progress and further information is known.

Optioneering

Optioneering is the process of evaluating different potential solutions to decide which option or options to take forward. The intention behind optioneering is to consider all potential options and apply thorough appraisal in relation to their feasibility, ability to achieve stated objectives and deliver maximum value for money.

The robustness of the optioneering process will depend on:

- the complexity of the scheme and feasibility constraints identified in initial scoping

- whether multiple routes or interventions are intended to be delivered or just a single solution is sought
- whether the options are to be assessed as part of a business case or funding application process
- each of these factors will require multiple options to be considered in a relative level of depth. Discretion should be applied in considering the level of depth required

Developing initial options

From the exercises completed under the 'Objective Setting' section of the RDR, desire lines should be well-understood, the quality and quantity of existing links should be appraised. With the objectives now drafted, there should be a strong idea of which locations should be connected and a sound, foundational appreciation of the issue with the existing environment and things to consider in devising plausible solutions.

For route-based schemes, selecting potential appropriate alignments should form the first stages of optioneering. These will either be formed by using existing PRow, traffic-free paths or on-road routes or involve the exploration of the creation of a new routes across public and private land. It is likely that route alignment options will encompass a combination of these features.

Where routes require, or could require the use of land which is not within public ownership it is beneficial to consider a range of potential alignments possibly across land owned by a range of land-owners. While a preferred route can be identified, the exploration of alternative options in these instances helps to reduce single points of failure within a route if negotiations with a particular landowner breakdown.

Demonstrating flexibility in routing can also show a willingness to work with land owners to plot a route which can deliver mutual benefits.

With the identified Key Users and Objectives of prime concern, things to consider for rural active travel route alignments are:

How direct must the route be? –

Directness is a major focus of traditional route assessment but is focussed more on the needs of people making utility journeys – e.g. to work, education or to meet basic needs. If a high proportion of users are expected to be leisure or tourism-related then directness is of much lesser significance.

Do environmental constraints render a route infeasible? – Some characteristics of the route may limit potential usership or make it less inclusive and may be too costly or complex to mitigate against.

Does the route have potential to deliver further social value? – The goal of meeting the needs of Key Users and achieving the stated objectives may be exceeded by opportunities to add further social value.

Following this, pros and cons of different link typologies should be appraised for their scheme-specific suitability or adaptability. Some example considerations are shown in Table X. At the end, there should be small selection of potential route alignments.

Collaboration with stakeholders

It is recommended that stakeholders, especially identified key actors and Key Users are included in various stages throughout the RDR process. In particular, the objective-setting, optioneering or options appraisal sections are thought to be specific points where input may be most beneficial.

It is further recommended that this takes the form of consultation or collaboration, to ensure a synergy is maintained between what outcomes are sought for the route or intervention and how these are proposed to be achieved.

In 2024/2025, Walk Wheel Cycle Trust supported by the Canal & River Trust and funded by ATE, conducted ‘Co-Design Engagement’ to come up with improvements to the National Cycle Network Route 81 on the Bilbrook Towpath. The aim of the exercise was to produce a list of potential design interventions by working collaboratively with a ‘stakeholder board’ in a series of workshops and led walks.

The project team agreed a list of key groups to be represented on the board. Initial scoping work helped to identify a list of community contacts from groups such as Friends of Bilbrook and Bilbrook Parish Council. Aligning with the project objectives and Key Users in the vicinity of the path, the following representatives were sought for the stakeholder board:

- Disability representative
- Women and Girls representative
- People of colour representative
- Youth representative
- Community Champion
- Healthcare representative
- Boating Club representative
- Anglers Club representative

The board also comprised ad hoc professional guides to advise on certain aspects of design.

A Memorandum of Understanding was created for the stakeholder board. This is a formal but non-legally binding agreement between two or more parties that outlines their shared intentions, roles, and responsibilities for working together towards a goal.

In each of the mapping sessions, stakeholders put forward input based on their own experiences, ranging from safety concerns to ecological preferences and ideas for additional features. To acknowledge the expertise given, members were compensated with a £75 voucher of their choosing for each session.

The setting up of the stakeholder board was found to have the added benefit of increasing wider-community awareness of the project and a network of new local active travel champions and volunteers.

Strategic and economic evaluation

A holistic approach to benefits appraisal is recommended for rural active travel schemes. This will require consideration early in the route development process, to ensure each type of benefit to be assessed is maximised through scheme planning and design.

The overall scheme appraisal will likely comprise some monetisable and some non-monetisable benefits and should be split between purpose trips and leisure trips depending on the expected split of users. For commuting trips the DfT Active Mode Appraisal Toolkit may be used to assess monetisable benefits with some adjustments made to the calculating metrics based on the rural context. The AMAT breaks down its overall Benefit-Cost Ratio with monetisable benefits associated with mode shift, journey quality and health.

High level estimates of economic impact from a rural active travel scheme could be derived from survey data collected in relation to visitor spending. This could be taken from STEAM surveys conducted by local authorities or associated organisations which model the impact of tourism expenditure in a particular geographic area.

It should analyse a variety of inputs including visitor attraction numbers, tourist accommodation bed stock, events attendance, occupancy levels, accommodation tariffs, macroeconomic factors, visitor expenditure levels, transport use levels and tourism-specific economic multipliers. On site surveying may help to further ascertain how far visitors have travelled and whether they are staying multiple nights in the area.

It should be noted that it will be easier to build a strategic and economic case around visitor spending if there is already some form of tourism economy in the area. Relatedly, any tourism economy multiplier value should take into consideration the overall scale of the scheme and existing supporting facilities such as accommodation, retail, food and drink offering, entertainment, wider transport links and other attractive characteristics.

Social impacts of the scheme should be explored but their appraisal methods considered with caution in regard to over-estimating. The method for estimating changes in number and severity of accidents, security, personal safety and perceptions of safety, journey quality, physical activity, and carbon for leisure related travel needs to be different than for everyday travel because the counterfactual choices will be different.

With the issues related to the sparsity of rural populations, the distribution of benefits, particularly the distribution of access, should be given greater consideration. Further guidance is available from TAG Unit A4-2.

If carbon savings is a specified objective of the scheme then this should influence the route alignment. If the route is expected to attract many recreational or tourism trips then private vehicles are likely to have greater occupancy levels than are associated with commuting trips.

To maximise the utility value of the proposal and permit longer-distance car-free travel then connecting to rail stations, bus stops and other transport hubs is recommended. This will also strengthen any economic case, as well as strategic case with increases in rail patronage able to be evaluated.

Feasibility assessment

With the potential route alignments drafted, it is at this stage that further data is recommended to be gathered, including the commissioning of location-specific surveys around the area of each route alignment.

Examples of surveys required could include:

- **topographical surveys:** to ascertain whether any route alignments would be infeasible to develop to the required standards
- **preliminary ecological appraisal (PEA):** for off-highway routes which require widening or new greenways, it is important to understand whether vegetation can be removed and if mitigations would be required in doing so. The PEA is a relatively high-level, initial biodiversity identifying ecological constraints such as the potential for protected habitats or wildlife to be present in the study area. The need for further surveys and opportunities for ecological enhancement would also be presented and provide insight into any biodiversity net gain requirements
- **habitats consents:** these may be required from Natural England, following the results of the PEA
- **traffic surveys:** to establish traffic speeds, volumes and compositions for any on-road sections
- **active travel surveys:** to understand current levels of use along busier sections of route, primarily focused on volume of use
- **safety audits:** to understand current perceptions of personal safety, with particular emphasis on the views of women and girls. Consideration should be given to undertaking these at night as well as day to gather a holistic understanding
- **flood risk activity permits and flood risk assessments:** if developing a path in flood zones, flood risk and drainage assessment will be required and a Flood Risk Activity Permit may need to be issued by the Environment Agency. This location may trigger the need for planning permission

Consents, permissions and conditions

A further consideration when it comes to the feasibility of a scheme will be the ease at which that land can be developed. Having this information will be imperative to the appraisal of options under the multi-criteria assessment.

The land registry should be consulted to ascertain land ownerships along potential route alignments.

For permissive paths consent will need to be granted from land owners. The purchase of land may be deemed an appropriate route for certain types of scheme, especially where negotiating consents may be complex and involve conditions detrimental to scheme delivery. Appendix A provides useful information regarding obtaining consents and permissions.

Early engagement with landowners is vital to the success of schemes. Initial approaches should be carefully planned. Local advocates of a scheme (e.g., community groups, parish council, schools) may be useful in making introductions to landowners and facilitating meetings.

Early discussions should focus on mutual benefits that might be realised through the introduction of new or improved routes such as opportunities to divert PRow, the introduction of fencing, reduced maintenance liabilities and opportunities to access grants and subsidies. This engagement will help to gauge the likelihood of them consenting to the route prior to the completion of the optioneering phase.

Long list options

With this additional information, it should be possible to consider potential designs specifications or typologies for each route alignment.

A key focus of the optioneering process is to test as many plausible solutions as possible to ensure the best possible option is taken forward. If a business case is to be submitted, Step 5 of the TAG 'Transport Appraisal Process' guidance should be followed closely to produce a 'long list' of options.

For rural active travel schemes, it is recommended to have options which represent different levels of design specification and therefore cost. With exact costs unknown at this stage and some technical details missing it will be impossible to be exact on design specifics and this should be incorporated into the optioneering. For example, it may be unknown at this stage whether there is an electrical connection to easily support lighting along the scheme or whether there will be sufficient demand to merit a high-spec signalised crossing at a location.

As such, some design features may be considered as 'nice to have' and represent higher spec options to be assessed. Through the multi-criteria assessment (detailed in the following section), these variations will be appraised for the relative value they bring to the overall offering.

For example, some features may represent better value for money than others, depending on the scheme objectives and location specifics.

Consideration should be given to how each route typology and design feature may influence user demand. Table 4.1 in Chapter 4 of this document should be referred to for guidance. The ATE Uplift Tool could also be used to conduct sensitivity testing into the variation in expected demand from different types of route.

One route alignment has likely emerged by this stage as being the preferred route alignment. More options, featuring variations in design specifications or features, for the preferred alignment are likely to be desired with fewer options based around less suitable route alignments.

Demand and uplift estimations

In rural areas, with high volumes of leisure trips, it can be difficult to accurately predict baseline flows and latent demand for a path so as to inform post-construction demand estimates. On-site surveys could be gathered, with users questioned about their trip purpose and origin and destination, for example. However, this can be time consuming to conduct in the volume required for accurate data inputs.

There is also a lack of academic literature predicting demand for new active travel trails. In the absence of better data, the comparative method, taking before and after data collected from comparable sites (Department for Transport, 2022b, page 5, Section 2.2) may be the most appropriate method and has the potential to estimate demand and associated benefits.

Route Name	Length of route (km)	Number of visitors	Type of visitor	Year of data	Expenditure (£ million)	Expenditure per visitor rebased to 2010 (£)	Number of visitors per kilometre
Wales Coast Path	1392	43,000,000	Walk	2014	547.0	11.51	(30,891)
South West Coast Path	1008	8,700,000	Walk	2010	500.0	57.47	(8,631)
English Coastal paths	–	29,000,000	Walk	2017	379.0	11.37	
Sea to Sea	287	241,051	Cycle	2006	10.7	49.13	840
Coast and castles	151	68,000	Cycle	2006	3.3	53.72	450
Hadrian's cycleway	234	160,242	Cycle	2006	6.5	44.90	685
Pennine cycleway	184	39,182	Cycle	2006	1.8	50.85	213
Celtic trail	734	940,000	Cycle	2008	32.5	36.14	1,281
Taff trail	97	400,000	Cycle	2008	14.0	36.58	(4,124)
Way of the roses	274	131,000	Cycle	2012	3.0	21.49	478
Minimum	–	–	–	–	–	11.37	213
Maximum	–	–	–	–	–	57.47	1,281
Mean	–	–	–	–	–	37.32	658

Some long distance walking, cycling and wheeling routes are shown in the table below alongside information pertaining to visitor numbers and expenditure.

It should be noted that where comparison data is drawn upon, evidence should be submitted to support its use as a benchmark for the proposed scheme with a case put forward for any assumptions attached.

Making the case for change

The 'Business As Usual' route alignment should also be listed, as a reference point (although additional surveys should not be required unless this is considered a feasible alignment). One option must include no upgrades at all to this route (as required within a business case) but additional options may be included which feature different types of upgrades or link typologies.

A 'Do Minimum' scenario is also required within business case guidance and again recommended as a reference point. This should represent the cheapest option (besides the business as usual) and the minimum level of upgrade required to advance scheme objectives.

Examination of both the 'business as usual' and 'do minimum' scenarios are formalities of the business case process but considered a useful practice, regardless, in furthering the case for investment and a higher specification design standard.

Route Assessment

The Multi-Criteria Assessment is a frequently used system of critiquing options based on scheme-specific criteria in order to advance from a long-list to a short list of potential options.

As with all Steps within the RDR, the complexity of the multi-criteria assessment (MCA) should be proportionate to the scale of the scheme.

A framework for assessment must first be drafted with a scoring system attached. This could vary from a simple Red Amber Green (RAG) assessment model for various criteria or represent a more detailed approach such as is outlined in business case guidance (e.g. the DfT East Tool).

Criteria for each option to be assessed against should centre upon the general themes of:

- alignment with objectives and wider policy
- modal shift potential
- economic benefits
- environmental benefits
- social or wellbeing benefits
- value for money (considering expected demand and high-level cost estimates)

- deliverability (in lieu of budgetary constraints, timeline constraints, technical constraints, key actor buy-in and barriers to implementation)
- financial appraisal
- commercial viability
- expected stakeholder support
- manageability of risk

The scoring system requires careful consideration. Scoring may be simplistic, multi-point or involve weighting criteria based on their relative significance. The scoring rationale, on how each score is applied for each criteria, should also be considered and written-up prior to commencement of assessment. The overall score will likely be an indexed value of each component. Early stakeholder engagement could help to shape the MCA and the weighting applied to various criteria.

The final MCA framework should be consulted on with the wider project team and receive approval from the business case reviewer, if required.

Much data is expected to be gathered and analysed to inform the scoring in the MCA, as well as the professional judgement of specified experts such as those responsible for scheme design, delivery or maintenance and other key factors.

Examples of data inputs could include the results of various audits for before and after the intervention, statistical data such as obtained for the initial scoping, high level cost and maintenance estimates, results from recent surveys (such as outlined above). Further support can be found in Step 5 of the TAG 'Transport Appraisal Process' guidance.

Each option should then be put through the MCA scoring – this is referred to as the 'sifting' process. The scoring process should be objective with each option ideally scored by the same assessor.

With the overall scores obtained, the options should be organised in a ranked list. The highest scoring option refers to the ‘preferred way forward’. It is expected that the ‘business as usual’ and ‘do minimum’ options score poorly.

The highest scoring options represent the ‘short list’ of options. If a business case is required, the short list options are taken forward for further consideration. Relevant guidance and any local or regional authority business case templates should be consulted.

Where a business case is not required, the RDR makes suggestions on how the final option may be identified. This may include wider project team and stakeholder consultation or further feasibility assessment following the development of preliminary-stage designs.

By the end of this rigorous process of optioneering and appraisal, the only option or options remaining to progress to a detailed stage of design and planning are the one(s) which are deemed technically feasible, with an appropriate level of risk, which deliver the best value for money, consider fully the needs of Key Users and are considered likely to achieve the stated objectives.

The discounted short-list options could be considered as part of any contingency planning for the scheme.

Developing the Offering

The overall increase in active travel demand for the proposed intervention and its achievement of stated objectives, marks its success. As much as possible should therefore be done to ensure that demand for the scheme is stimulated as much as possible. For rural schemes, although demand may be more disparate, both utility trips and leisure trips can be drawn upon to boost demand.

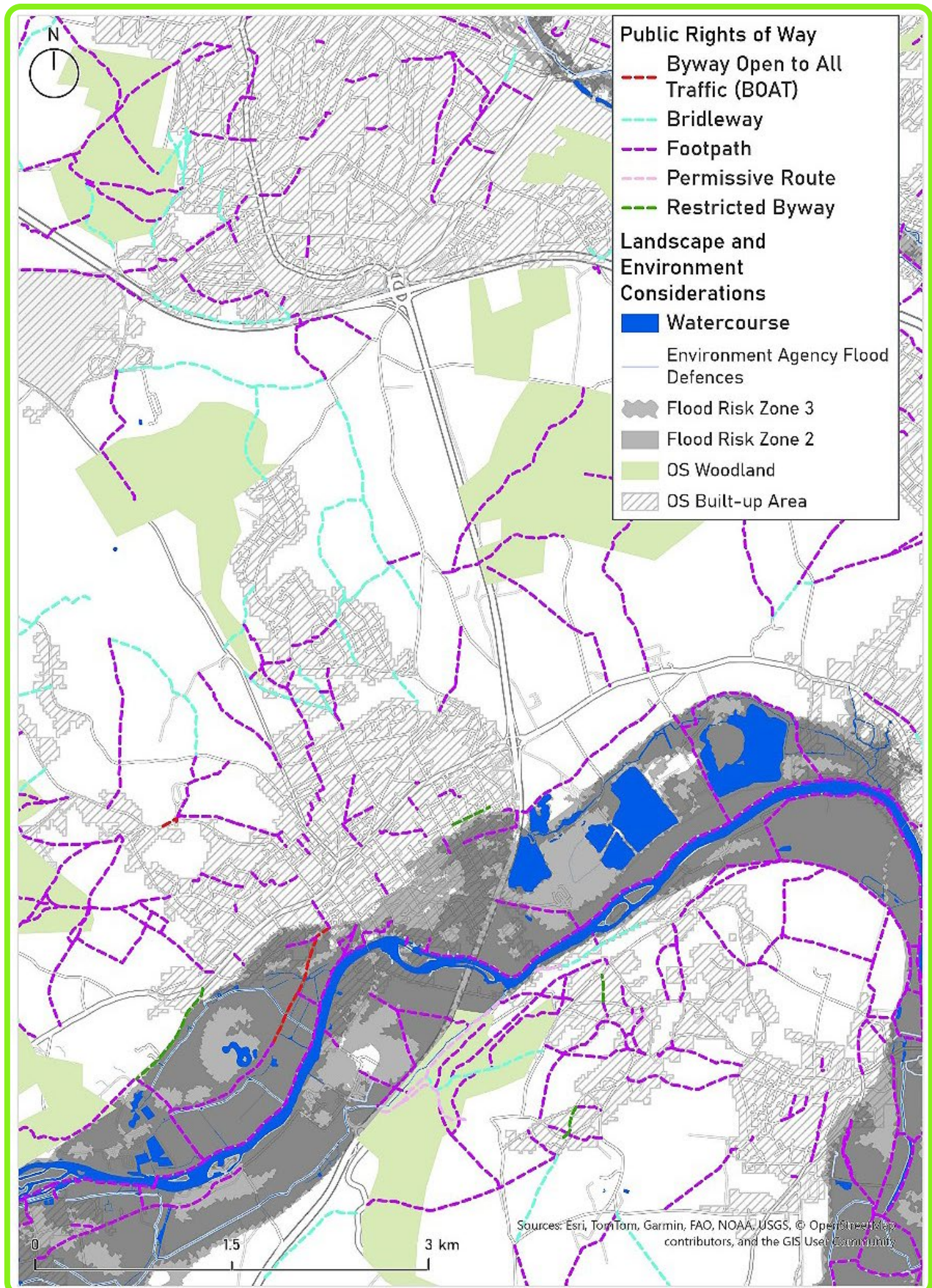
There are several ways in which the overall offering of the scheme could be further enhanced, beyond the design of the links or nodes themselves.

As outlined within the RDR, these could take the form of further features alongside the route which may support both public interest as well as the overall utility offering of the route for users. Further inspiration may be drawn from Chapter 11 of this document – ‘Features in the Rural Landscape’.

Inference can be drawn from the ATE Uplift Tool, AMAT and Healthy Streets guidance where certain features are connected to an expected increase in pedestrians and cyclists. These include more straightforward additions such as cycle pump and repair facilities, benches and Sheffield stands which will likely have only small uplift potential to bigger investments such as secure cycle parking facilities and lockers, interchanges with other modes, car parking, toilets and shower blocks, which may have substantial uplift potential.

Worked Example 1 of Following the Rural Design Routemap – Inter-Settlement Route

Figure 1.



The map shows an example study area of several small settlements poorly linked to one another through means other than via the major road network.

Following the RDR process, Background and Scoping exercises would identify key constraints to inter-settlement accessibility being the river and its associated flood plains, severance caused by the major road network and also extensive areas of woodland where some protected species are known to inhabit.

Review of Census data and other surveys may identify high levels of commuting between each of the settlements but with no rail stations, almost all trips are made by car and almost none by active modes. There may therefore be a strong local policy objective to improve sustainable connectivity.

There are a number of existing PRoW routes identified in the area. Following further analysis, some stretches of bridleway are identified as easily adaptable into an active travel corridor to the northern settlement with widths suitable to accommodate separation of cycles, pedestrians and equestrians. There are several footpaths around the central and southern settlements but these follow the watercourse in high flood risk land. There are no existing flood defences so mitigations and ground works are required.

Connections south of the watercourse are found to be more difficult. At present, there is only one footbridge crossing and it is located to the west of the central settlement, making a highly indirect route to the southern settlement.

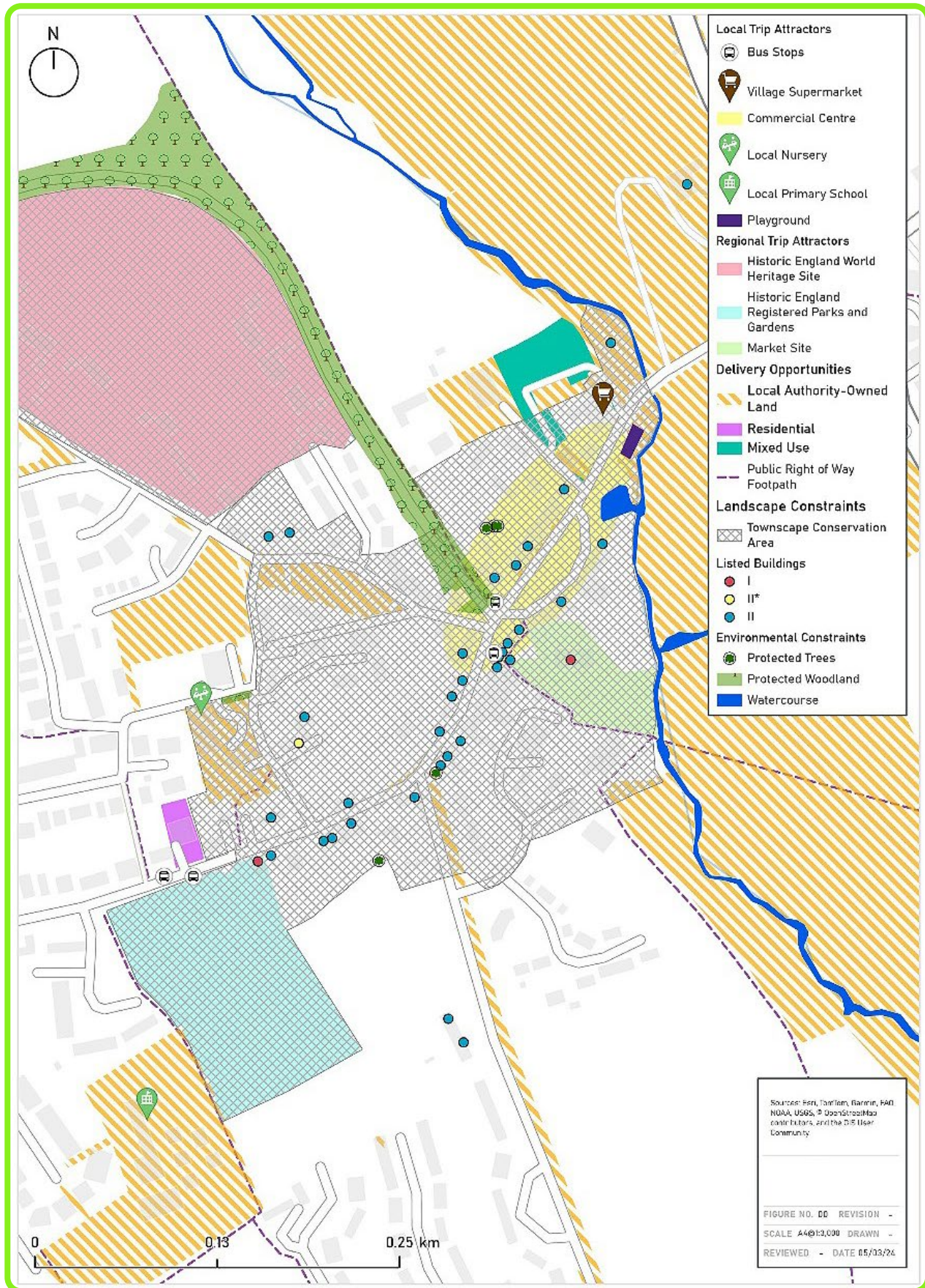
The footbridge is very narrow and would require extensive upgrades to be made suitable for cycles. The road bridge crossing is in a more suitable location but it is very high traffic volume with several busy junctions adjoining it which do not currently have mitigations for safe cycling.

In this example, potential objectives are likely to focus on the connectivity between the built up areas, such as linking to the train station in the northern settlement, reducing car dependency and congestion levels on local roads, increasing the proportion of active commuting trips between settlements, reducing social isolation, improving air quality, enhancing access to local woodland and outdoor space.

Depending on **objectives**, Key Users may be commuters, equestrians, households without access to a car, low income households and young people aged 16-25.

Potential **options** are numerous due to the variety of potential objectives but largely centre on route alignment. They could include adapting the existing direct, road network to support intra-settlement active travel, adapting existing PRoW and traffic-free paths, creating a new crossing of the watercourse or adapting existing ones or creating a new greenway with permissive route sections.

Figure 2.



The map shows an example study area of a small, rural settlement (sub 2000 population) where intervention is sought to support safe connectivity within the village.

There is a nursery and a primary school in the west and these are currently linked to the village centre, play park and residences in the neighbouring village to the east via a busy main road which carries traffic through the settlements. The nearest secondary and further education facilities are located 2km to the south.

Following the RDR process, Background and Scoping exercises would identify the multitude of HE Listed Buildings and the existence of a Conservation Area. Some roads are without footways and there are access barriers along the footway to the north, impacting the general mobility of disabled people

Whilst these may impact design decisions they could strengthen support for preservation of historic character of the village, limiting traffic and improving walking, wheeling and cycling.

It is identified that schemes supporting access to both the nursery and the primary school could also have the added benefit of improving connectivity to the Historic England sites and enhance the experience for visitors arriving without a car. These sites are significant enough to potentially better-contribute to the wider tourism economy of the surrounding area and attract overnight visitors, further supporting a case for developing a longer network of cycling, walking and wheeling routes. It is noted that forthcoming development sites could be opportunities for funding such as through S106 agreements.

Whilst there are some stretches of existing PRow these are assessed as needing various upgrades to be made suitable. The stretch to the north is lined by protected woodland and so would require environmental surveying and an assessment of construction feasibility and methods to ascertain costs, and consideration would need to be given to the safety of users, particularly women and girls, in more isolated route locations.

There is a watercourse in the east which is prone to flooding but it is identified that the land surrounding it is owned by the local authority, simplifying the construction of defences.

In this example, potential **objectives** are numerous but could include a marked increase in active travel rates to local primary and secondary schools, a reduction in collisions, strengthening the local or regional leisure or tourism industry, supporting local businesses and upholding local character through traffic reduction.

Key Users are likely to be disabled people, children under 16 and older people aged over 70.

Potential **options** could vary in many ways such as the type and placement of new crossings, route alignments, surface quality, whether to include traffic calming, level of environmental mitigations, and others.



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