



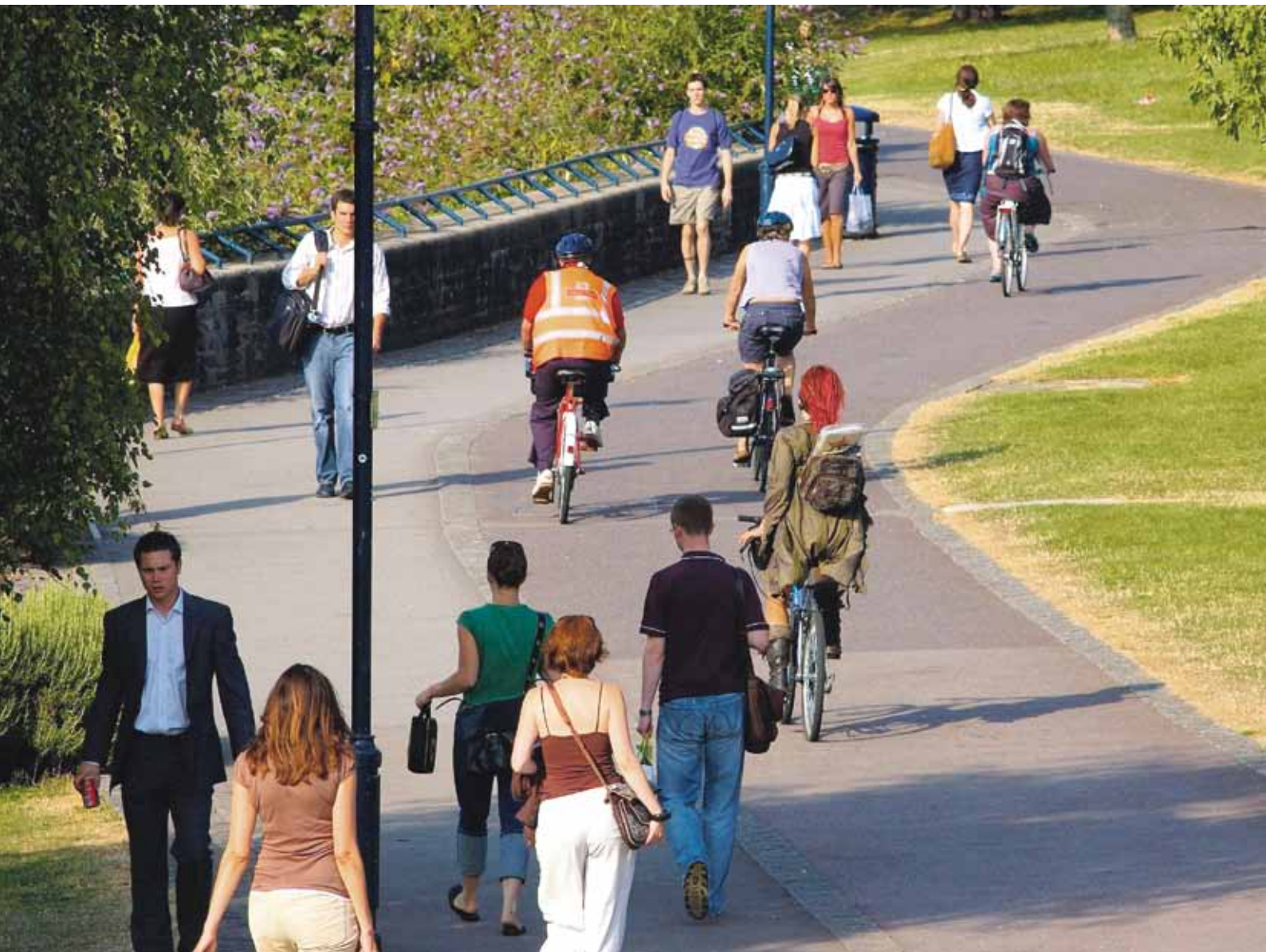
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Local Transport Note 1/12

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Shared Use Routes for Pedestrians and Cyclists



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1. Introduction

- 1.1** This Local Transport Note (LTN) supersedes LTN 2/86 *Shared Use by Cyclists and Pedestrians* (DoT, 1986). It should be read in conjunction with LTN 2/08 *Cycle Infrastructure Design* (DfT, 2008b) and *Inclusive Mobility – A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure* (DfT, 2002a).
- 1.2** Shared use routes are designed to accommodate the movement of pedestrians and cyclists. They can be created from new, or by converting existing footways or footpaths. Shared use routes may be segregated or unsegregated. A segregated route is one where pedestrians and cyclists are separated by a feature such as a white line, a kerb or some other feature. On an unsegregated route, pedestrians and cyclists mix freely and share the full width of the route.
- 1.3** Shared use routes created through the conversion of footways or footpaths can be controversial. There are many such examples that have been implemented inappropriately and/or poorly designed, particularly in urban areas. It is essential for designers to understand that shared use is not the ‘easy fix’ it might appear to be.
- 1.4** The design of shared use routes requires careful consideration and is best carried out by someone experienced in planning and designing for pedestrians and cyclists. A poorly designed facility can make conditions worse for both user groups.
- 1.5** Cycle routes networks often include a mixture of on-carriageway and shared use routes. It might therefore be necessary to divide schemes into route sections to assess each one in its appropriate context for design purposes.
- 1.6** LTN 2/08 *Cycle Infrastructure Design* introduced a number of concepts and design principles especially relevant to the design of shared use routes. Key amongst these are:
- the core principles that summarise the desirable design requirements for pedestrians and cyclists;
 - the different categories of design cyclist;
 - the hierarchy of provision; and
 - the type of provision appropriate for different motor vehicle speeds and flows.
- 1.7** This LTN complements LTN 2/08 *Cycle Infrastructure Design* and draws on these underlying principles.

Scope

- 1.8** This LTN focuses on routes within built-up areas, where the predominant function of the route is for utility transport, and where use by pedestrians and/or cyclists is likely to be frequent. As such, it expresses a general preference for on-carriageway provision for cyclists over shared use. However, it is not meant to discourage shared use where it is appropriate.
- 1.9** For example, in rural areas, a high quality shared use route away from roads might be a prime objective. Such facilities can be especially beneficial where there is no specific provision for pedestrians and cyclists alongside roads.
- 1.10** Guidance on introducing cycle routes in rural areas, where urban-style engineering measures can be intrusive, is available from Sustrans (see www.sustrans.org.uk/resources/design-and-construction/traffic-free).
- 1.11** Information on accommodating cyclists and other non-motorised users on trunk roads is available from the *Design Manual for Roads and Bridges* (DMRB).
- 1.12** Guidance on cycling in pedestrianised (vehicle restricted) areas is given in LTN 2/08 *Cycle Infrastructure Design* and Traffic Advisory Leaflet 9/93, *Cycling in Pedestrian Areas* (DfT, 1993).

The Equality Act

- 1.13** Shared use schemes are often implemented to improve conditions for cyclists, but it is essential that they are designed to take into account the needs of everyone expected to use the facility. Poorly designed schemes, and schemes where the available width is insufficient to comfortably accommodate the expected flows of pedestrians and cyclists, are likely to reduce the amenity value of the route.
- 1.14** Disabled people and older people can be particularly affected by shared use routes. Ultimately, however, it will depend on the quality of the design. Consideration of their various needs is an important part of the design of shared use, and the duties under the Equality Act 2010 are particularly relevant.
- 1.15** The Equality Act 2010 introduced a public sector Equality Duty, which came into force on 5 April 2011. The Duty requires public bodies to play their part in making society fairer by tackling discrimination and providing equality of opportunity for all. Authorities will need to consider how different people are likely to be affected by new scheme proposals, and due regard should be given to the effect they might have on those protected by the Duty.
- 1.16** The Equality Duty replaces three earlier public sector equality duties – race, disability and gender – and covers additional protected characteristics such as age and religion. Further information is given in *Equality Act 2010: Public Sector Equality Duty. What Do I Need To Know? A Quick Start Guide for Public Sector Organisations* (GEO, 2011).

2. Scheme development

- 2.1** A suggested scheme development process (which broadly reflects the hierarchy of provision of LTN 2/08 *Cycle Infrastructure Design*) is shown in Figure 2.1. It is intended to help ensure that the option finally settled on is the most appropriate choice in the particular circumstances for any given site. This includes a do-nothing option.
- 2.2** The flow chart is only a guide to scheme development. The hierarchy of provision that it embodies focuses on a particular issue in urban situations, where suitable on-carriageway solutions are sometimes ignored in favour of inappropriate conversion of footways. As such, the hierarchy (and hence the flow chart) encourages providing for cyclists within the carriageway. This might not suit all schemes, such as where a cycle route away from roads is highly desirable. In this case, the hierarchy needs to be re-ordered, and this is expanded upon in Chapter 4.
- 2.3** The flow chart is a considerably simplified representation of the actual development process. It does not include every stage and timeline. For example:
- **stakeholder involvement** is shown as a discrete stage, whereas in practice stakeholders could be involved throughout the process and at any stage in it;
 - **site assessment, audits** and **monitoring** are not indicated;
 - stakeholder involvement for on-carriageway schemes is not shown; and
 - it ignores how some options (e.g. new shared use versus shared use by conversion) might, in some circumstances, be assigned a different order of preference – see paragraph 4.13.
- 2.4** In practice, the process is unlikely to be as straightforward as indicated. There could be several options to compare covering a wide range of issues that have to be considered before a balanced design decision, suited to the needs of all users, can be arrived at.

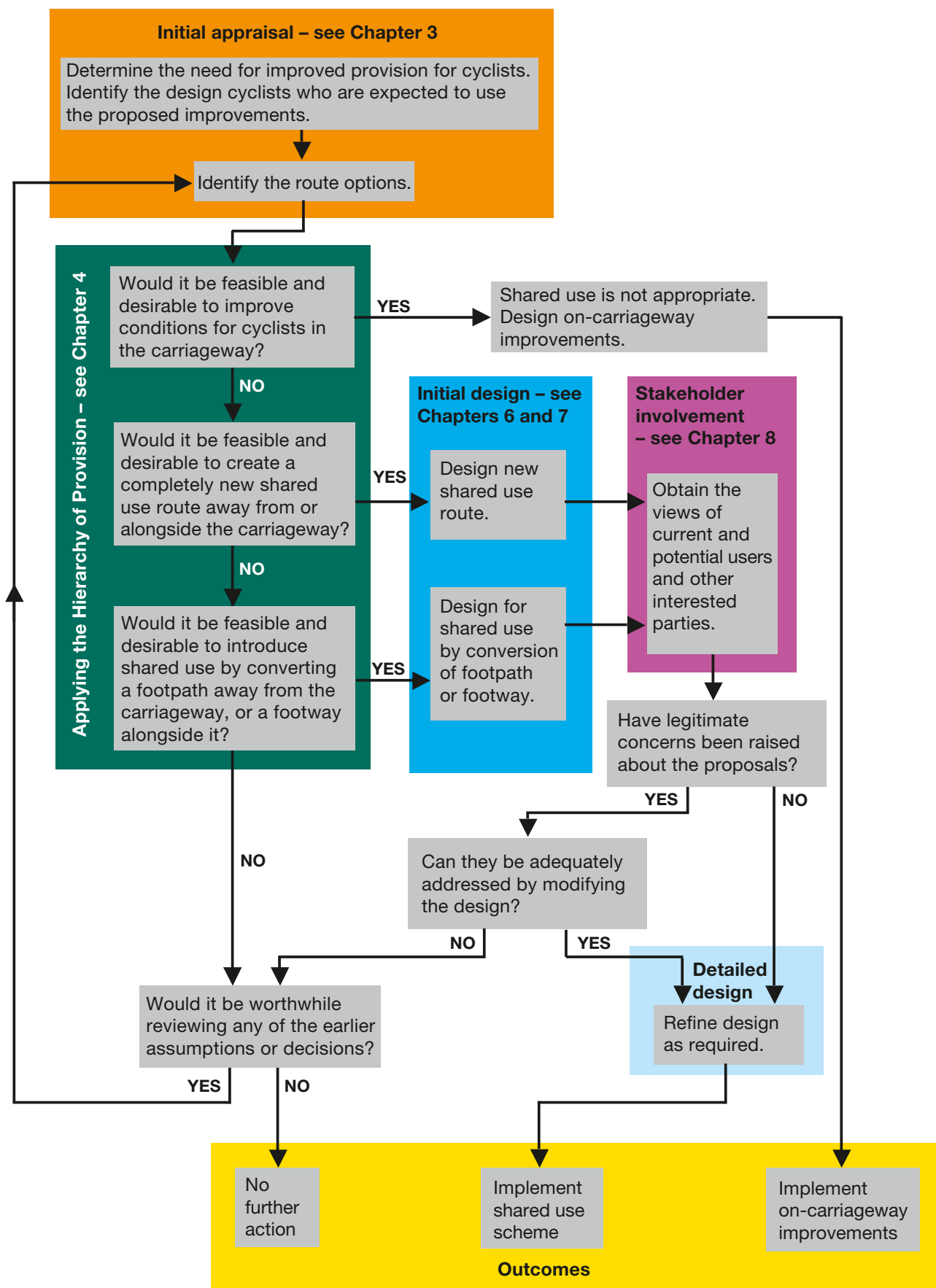


Figure 2.1 Typical scheme development process

3. Initial appraisal

- 3.1** The initial appraisal will help to establish the need for improved provision for cyclists and to identify the types of cyclist any improvements are aimed at. The first step is to consider the strategic requirement for cycling (including greater permeability) on an area-wide or corridor basis.
- 3.2** The decision to provide a new or improved cycle route may be prompted by, for example:
- an area or corridor transport study;
 - existing cycle flows;
 - suppressed demand;
 - public demand;
 - the need to improve continuity of existing routes;
 - local policies to encourage modal shift;
 - the creation/extension of a cycle route network;
 - site-specific or area-wide remedial traffic/safety measures;
 - a safety audit, cycle audit or cycle review identifying need;
 - a Safer Routes to School programme;
 - a school or workplace travel plan;
 - new development;
 - rights of way improvement plans; and
 - tourism/leisure/health promotion policies.
- 3.3** Routes linking existing and proposed trip attractors/generators should offer good conditions for cycling. In general, improved provision should only be made where there is (or will be) a demand for cycle trips and where existing conditions are unsuitable, not simply because an opportunity exists to do so. An exception to this might be, say, a completely new cycle route away from the road intended for leisure purposes where the route itself may be the attraction. However, it should still form part of a coherent network wherever possible.

- 3.4** The hierarchy generally discourages designers from taking cyclists off the carriageway, and Table 4.2 in Chapter 4 indicates that, for roads with 85th percentile speeds of 40 mph or less, on-carriageway provision is always a possible option. This could involve new cycle lanes, or widening of existing ones. Another option might be to install a hybrid cycle track (see paragraph 4.15). Where it is decided to introduce a shared use facility alongside a road, it is important that the needs of cyclists who choose to remain in the carriageway are not ignored.
- 3.5** Establishing existing levels of use by pedestrians and cyclists along a route or within a corridor can be helpful when deciding which types of user might benefit from any proposed improvements. If conditions are poor, there might be an artificially low level of use. In this situation, suppressed demand might be more important than current levels of use. It is useful to record any unlawful use of footways or footpaths by cyclists, as this could also indicate a demand for improvement.

4. The underlying principles

- 4.1** LTN 2/08 *Cycle Infrastructure Design* provides detailed advice on the underlying principles of designing for pedestrians and cyclists. Key amongst these are the core design principles, the identification of certain cyclist categories (the ‘design’ cyclist), consideration of traffic speeds and flows, and the hierarchy of provision.

Core design principles

- 4.2** The core design principles are:

- Convenience;
- Accessibility;
- Safety;
- Comfort; and
- Attractiveness.

- 4.3** These design principles represent the properties desired for a successful scheme. Practitioners need to consider each principle while aiming to ensure that design decisions aimed at addressing one do not have an unduly negative impact on the others. For example, the most convenient route might not always be the safest option, or an attractive route could involve such detours as to make it relatively inaccessible.

Cyclist categories

- 4.4** Cyclists, like pedestrians, do not comprise a homogeneous group. The five basic design cyclist categories identified in LTN 2/08 are:

- fast commuter;
- utility cyclist;
- inexperienced and/or leisure cyclist;
- children; and
- users of specialised equipment (e.g. cycle trailers, tricycles, handcycles).

- 4.5** Their needs, and hence the type of provision required, can vary considerably. For example, children or inexperienced cyclists might welcome the comfort of off-carriageway provision, while confident commuter cyclists might prefer to use the carriageway to keep journey times to a minimum. Understanding the type of cyclists a proposed facility is intended to serve plays an important part in deciding which of the options in the hierarchy of provision are practical propositions.

Hierarchy of provision

- 4.6** The road network is the most basic and important cycling facility available. In general, cyclists need only be removed from the road where there is an overriding safety requirement that cannot be met by on-carriageway improvements, or where providing an off-carriageway cycle route is an end in its own right.
- 4.7** For cyclists, the potential disadvantages of leaving the carriageway include poor route continuity and increased potential for conflict with pedestrians (who may also be disadvantaged). There are also safety issues at side road crossings to consider – see paragraph 6.12.
- 4.8** LTN 2/08 introduced a hierarchy of provision to assist in the design decision process for cycle improvement schemes. The hierarchy encourages practitioners to explore on-carriageway solutions first, the aim being to discourage practitioners from resorting too readily to shared use where it might not be appropriate.
- 4.9** The hierarchy, which is reflected in Table 4.1 (and Figure 2.1), is often a good starting point, but it is important to understand that it is not meant to be rigidly applied. For example, if scheme objectives suggest a clear preference for providing cyclists with an off-carriageway facility, as might often be the case in rural settings, creating a shared use route might be highly desirable.
- 4.10** Such routes can be particularly valuable where a considerable proportion of cycle traffic is for recreation, and they could be of particular benefit to children and less confident cyclists. In this situation, on-carriageway provision could be last in the hierarchy.

Table 4.1 Suggested hierarchy of provision

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

- 4.11** The actions in the hierarchy are not necessarily mutually exclusive. For example, where a route is operating at capacity, reducing the volume of traffic might make it practicable to reallocate carriageway space to accommodate wider cycle lanes.
- 4.12** Where it is decided that an on-carriageway solution is not viable, it is recommended that the reasons are documented. This will prove beneficial if there is a requirement to justify a proposal at a later date, such as at a public inquiry.
- 4.13** Implementing shared use does not necessarily rule out the need to improve conditions on the carriageway, as some cyclists might choose to continue using it.

Traffic speeds and flows

- 4.14** Table 4.2 is based on Table 1.3 of LTN 2/08 and gives an approximate indication of suitable types of provision for cyclists depending on traffic speed and volume. It shows that adopting the upper level solutions in the hierarchy (i.e. reducing the volume and/or speed of traffic) makes on-carriageway provision for cyclists more viable. LTN 2/08 provides detailed advice on traffic volume and speed reduction.

Table 4.2 Guide to providing for cyclists

Flow	85th percentile speed			
	Below 20 mph	20 to 30 mph	30 to 40 mph	Over 40 mph
Less than 1500 vpd, or 150 vph				Cycle lanes or tracks
1500–3000 vpd, or 150–300 vph			Cycle lanes or tracks	Cycle lanes or tracks
3000–8000 vpd, or 300–800 vph	Cycle lanes might be appropriate	Cycle lanes might be appropriate	Cycle lanes or tracks	Cycle tracks
8000–10,000 vpd, or 800–1000 vph	Cycle lanes	Cycle lanes	Cycle lanes or tracks	Cycle tracks
Greater than 10,000 vpd	Cycle lanes or tracks	Cycle lanes or tracks	Cycle lanes or tracks	Cycle tracks

Notes:

- 1 vpd = number of motor vehicles in a 24 hour weekday.
- 2 vph = typical number of motor vehicles in a typical morning peak hour.
- 3 Where traffic speed/flow is low, the designer should aim to avoid the use of signs or markings specifically for cyclists.
- 4 Cycle lanes used in the higher speed/flow situations should provide good separation between cyclists and motorists. Wide cycle lanes or hatching can help here.
- 5 Where cycle lanes or tracks are shown in the table, cycle lanes should be considered first.
- 6 In congested areas cycle lanes can be useful even when traffic speed is low.

Hybrid cycle tracks

- 4.15** It is worth expanding on one particular alternative to shared use – reallocating carriageway space to create what is sometimes referred to as a hybrid cycle track. This detail, where the track is raised slightly above the carriageway surface but sits below the level of the footway, is common in Copenhagen and elsewhere on the Continent, and it has been used at a small number of locations in the UK.
- 4.16** There is no particular requirement to sign hybrid tracks (or use coloured surfacing). In many cases, the track itself will suffice. However, signing might be necessary if encroachment by motor vehicles (including parking) becomes a problem.
- 4.17** Figure 4.1 shows an example of an unsigned hybrid track.
- 4.18** Table 4.3 lists some of the advantages and disadvantages of hybrid cycle tracks.
- 4.19** As a result of these advantages the hybrid track might, in certain circumstances, prove to be a better solution than, say, junction improvements, hence the need for a flexible approach in determining the priority for on-carriageway measures within the overall hierarchy. The hybrid cycle track is relatively new in the UK. Careful consideration will therefore be necessary in order to deal with issues such as detailing at bus stops, junctions and crossings.



Photo: Tony Russell

Figure 4.1 Hybrid cycle track in Cambridge

Table 4.3 Advantages and disadvantages of hybrid cycle tracks

Advantages	Disadvantages
Allows cyclists to remain ‘in’ the carriageway. Provides a degree of segregation between cyclists and motor vehicles. As such, it removes one of the reasons for unlawful footway cycling (i.e. cyclists’ concerns over safety in the carriageway). Provides relatively easy access for cyclists to and from the carriageway proper – this is particularly useful on the approach to side road junctions, as cyclists will then have unambiguous priority at these locations (see paragraph 4.20). Using the detail on both sides of the carriageway avoids the problems associated with two-way cycle tracks alongside roads (see paragraph 6.13).	Can be less comfortable for cyclists if width is limited. More expensive than a cycle lane, especially where drainage gullies need relocating. Can complicate matters at bus stops. Motor vehicles might park in the track unless specific measures are implemented. Open doors of motor vehicles parked alongside a hybrid track can present a hazard to cyclists.

- 4.20** On the approach to such features, it is recommended that the kerb delineating the track ramps down to carriageway level, then ceases. Returning cyclists to the main carriageway in this way is particularly useful at side roads, where it should be clear to motorists that cyclists have priority when passing the junction.
- 4.21** The lateral interface between carriageway and track also needs some consideration. Where cyclists can be expected to join the track between junctions, the interface needs to be designed so that they can safely negotiate the level difference between the two surfaces. This might be effected by, for example, a battered kerb.
- 4.22** Hybrid tracks should be kept clear of lamp columns, sign posts, etc. Two-way operation on a hybrid cycle track is not recommended.

5. Site assessment

- 5.1** Site assessment is an examination of conditions along potential routes and their environs for the purpose of prioritising the options under consideration and, later, for informing the design of the option selected. Site assessment should not be confused with user audit, risk assessment, or safety audit. These are separate tasks carried out as required and at various stages in the design process, to check on and, if necessary, modify the design to address particular issues.
- 5.2** It is recommended that site assessment is carried out by someone experienced in planning and designing for pedestrians and cyclists. Such experience is valuable in gauging the relevance of particular site characteristics and deciding what to record.
- 5.3** Site assessment can take place at any time leading up to the design process. Some site assessment will be required during the initial appraisal stage when various route options are being identified. A more detailed assessment will be required when applying the hierarchy of provision to decide whether shared use would be appropriate or not.
- 5.4** The assessment process can create:
- a record of baseline information;
 - an opportunity to identify key design issues for pedestrians, and cyclists, including older and disabled people, at an early stage;
 - an opportunity to identify potential problems, especially those that might affect the viability of the scheme; and
 - an audit trail that documents the reasoning behind the scheme.
- 5.5** A record of existing conditions, including user flows and frontage activity, will enable designers to evaluate how suitable a site is for conversion and what form it might take. This requires an understanding of how different design issues can affect users, frontagers and residents.
- 5.6** Route continuity is important – gaps in a route can significantly impact on convenience for cyclists and their willingness to use the facility as a whole. If the character of a potential route corridor varies significantly along its length, it is likely that the corridor will need to be assessed as a number of distinct sections. In addition, where some of the sections are on the carriageway, it is important to consider how cyclists will make the transition from carriageway to track and vice versa, should shared use be implemented.

- 5.7** The assessment can be referred to if there is a need to explain how a scheme has been developed, especially if the thinking behind an implemented scheme is challenged at a later date. Motor vehicle, cyclist and pedestrian flows and collision rates, for example, might change over time. Without a record of site conditions at the time of design, the original justification for a shared use scheme could be called into question.

Physical conditions

- 5.8** Surface type and condition, the amount of foliage present (or likely) at times of high growth and the level of lighting provision, need only be recorded in the broadest terms. This will be sufficient to identify any such features to be taken into account, and which might influence the form the facility takes.
- 5.9** Recording any scope for making additional width available (e.g. by reallocating space within the highway boundary, or acquiring land outside it) will be useful. Width strongly influences the quality of shared use routes, and any additional width is welcome. On the other hand, the availability of additional width might make a shared use route unnecessary. It might be possible to widen the carriageway to the benefit of cyclists, by moving the footway out (and maybe widening it at the same time).
- 5.10** Obstructions reduce the effective width of routes and can present a particular hazard to blind or partially sighted people and cyclists. Obstructions should be recorded and assessed as to their significance in terms of design, and how they might be overcome.
- 5.11** The ease with which cyclists are likely to access a potential shared use route from the immediate surroundings needs careful consideration. This is particularly important where two-way cycle tracks on one side of a road only are being considered as a possible option, because cyclists will need to cross the road to access the facility. The assessment should consider how the layout might allow for this to be achieved safely and without involving unacceptable delay or inconvenience.
- 5.12** The vertical alignment of a route can have a significant effect on its attractiveness to cyclists. A route with a fairly constant gradient will require less energy than one that rises and falls to get to the same destination. Recording the vertical alignment will allow designers to assess the suitability of a route and, where there is a choice, help them to determine the preferred option. Paragraph 6.15 gives advice on designing routes to minimise cyclist energy expenditure.
- 5.13** Gradients need to be recorded because they can have a significant impact on comfort. Where one of the route options is less hilly than surrounding routes, cyclists might divert to it. It therefore needs to be borne in mind that if this option is selected, its design will need to allow for any additional flow it attracts. Efforts should be made to avoid alignments steeper than the adjacent carriageway. LTN 2/08 provides more detailed advice on gradients for cyclists.

- 5.14** Routes passing private accesses can cause problems for cyclists. Whilst cyclists generally have priority at vehicle crossovers, the frequency of these crossovers should be recorded because they are potential conflict points and might make shared use a less attractive option. The number of side roads a potential route crosses is similarly important – see paragraph 6.12.

Levels of use

- 5.15** The type of provision required will depend in part on how many people are likely to use the new route. It will therefore be necessary to establish current patterns of pedestrian and cycle use.
- 5.16** Where one of the options under consideration is to convert a pedestrian route to shared use, surveys of pedestrian movement will generally be limited to the footway or footpath under consideration. Cycle surveys will need to be more widespread. Knowledge of cycle flows in the carriageway adjacent to the pedestrian route and on surrounding routes is important. Designers will need to consider the transfer of some cyclists from the adjacent carriageway and possibly other nearby routes. Suppressed demand and increased demand from proposed future developments also need to be taken into account.
- 5.17** There will be a need to identify whether particular groups, such as children, older people and disabled people (all of whom might be cyclists as well as pedestrians), are using a route under consideration to any significant extent. The proximity of schools, residential accommodation for older people, hospitals, and facilities for disabled people, for example, will be relevant here.
- 5.18** It might be helpful to assess the number of child cyclists separately – this is important when creating cycle routes to schools. In this case, the surveys can be supplemented by consultation with local schools about cycle use for school journeys and the potential for increased cycling.
- 5.19** Times of peak flow need to be determined. There might be more than one morning or afternoon peak if, for example, the proposed facility is close to a school and it also serves a commuter route. There might be other peaks – factories and hospitals with shift working can experience significant flows at times other than in the morning or afternoon.
- 5.20** Cycle use tends to peak between 7am and 9am, and between 3pm and 6pm (7pm or later in larger cities) although, as with pedestrian flows, there might be other peaks. I'DGO research *The Design of Streets with Older People in Mind* (Newton, R. and Ormerod, M. (2007–2011)) found that peak times for older people being out and about in the community are typically 9.30am to 12am, and 1.30pm to 3.30pm.
- 5.21** Peak and 12-hour average motor vehicle flows and speeds will be necessary to assess their impact on pedestrians and cyclists, and it will be useful to record the proportion of buses and heavy goods vehicles using the route.

- 5.22** Where practicable and appropriate (depending on the scale of the scheme), pedestrian and cycle counts are best taken over representative 12-hour days, including weekends. Seasonal and other site-specific factors will need to be taken into account.
- 5.23** Surveys are best done in good weather, as the effects of poor weather on pedestrian and cycle flows can be significant. If exceptional weather or other conditions on the day of the survey appear to have suppressed flows, the survey might need to be repeated. For pedestrians and cyclists, the direction of travel and any tidal flow characteristics need to be recorded. It is also useful to record the size of pedestrian groups.
- 5.24** It is useful to record if unlawful or illegal cycling is taking place. Cyclists using footpaths or footways, or travelling the wrong way in one-way streets, can indicate a need for improved measures for cyclists on or off the carriageway. If cyclists take to the footway only occasionally, localised improvements for them in the carriageway might be more appropriate than implementing shared use.
- 5.25** The public might be involved to some extent on a number of occasions during scheme development (see Chapter 8), and site assessment might be one such instance. Here, discussions with pedestrians can take place while usage patterns are being recorded. Such local knowledge can help to identify patterns of use that might not otherwise be anticipated.

Safety record

- 5.26** Where the scheme is aimed at addressing concerns over safety, it will be necessary to examine records of collisions. It is recommended that records for at least the preceding three years are considered. A scheme might also be designed to address perceived safety issues that are affecting user comfort. In this case, the concerns might not be reflected in collision statistics.
- 5.27** Pedestrian and cyclist injury collisions are often under-reported, so it is worthwhile seeking information from sources other than the STATS19 database, such as hospital records. Personal security issues should also be taken into account, particularly where features such as subways or other areas away from the carriageway are being considered to form part of the proposed route.
- 5.28** It should be borne in mind that introducing shared use will not necessarily improve safety for cyclists if the route involves frequent road crossings. Side road crossings can be particularly hazardous for cyclists – see paragraph 6.12.

Visual records

- 5.29** Photographs are useful for design and consultation purposes, particularly for significant features such as changes in direction, junctions or road crossings. It can be helpful to record the photograph positions and other relevant information on a plan of the route. Video recording can also be useful.

Other considerations

- 5.30** After examining existing conditions and considering the design implications, it should be possible to broadly establish the form a scheme might take (including whether shared use is the right solution).
- 5.31** If a shared use option is preferred but physical constraints preclude constructing it to the desired quality, a decision will be needed as to whether to:
- retain the existing arrangements;
 - reconsider improving conditions for cyclists on the carriageway;
 - wait until additional land can be made available; or
 - accept a lower standard of provision.
- 5.32** Care should be exercised when deciding whether to accept lower standards of provision. Occasional reductions in the level of service might be acceptable, depending on scheme objectives, but if the route cannot offer generally improved conditions for cyclists without causing undue inconvenience for pedestrians, other options will need to be considered. It is important that all such design decisions are recorded.

6. General design considerations

- 6.1** Advice on cycle design issues, including surfaces, geometric design, signing, lighting, crossings, etc. is given in *LTN 2/08 Cycle Infrastructure Design*. Advice on pedestrian design issues is given in *Guidelines for Providing for Journeys on Foot* (Institution of Highways and Transportation, 2000) and *Inclusive Mobility – A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure*. Inclusive design should be an integral part of the development of shared use schemes.
- 6.2** Whilst shared use is generally implemented to improve conditions for cyclists, it is important that proper weight is given to the needs of pedestrians. This is especially important where shared use is introduced by conversion of footpaths or footways. In many cases, some degree of compromise will be necessary, but designers need to ensure that introducing cycling to an existing route does not make conditions unduly worse for pedestrians.
- 6.3** Opportunities to improve conditions for pedestrians should be considered. People will obviously appreciate a new high-quality surface, but they will also benefit from footway or footpath widening, allowing them to walk in groups more comfortably. It might also be possible to declutter the route as part of the conversion process by relocating street furniture away from pedestrian desire lines and removing redundant signs and street furniture.
- 6.4** A shared use route that serves pedestrians poorly is likely to be unattractive to cyclists too. If improvements for cyclists can only be realised through a significant reduction in route quality for pedestrians, the scheme is unlikely to be acceptable. An exception to this might include introducing shared use as the only practicable option for addressing a safety problem for cyclists.
- 6.5** Chapter 4 discussed the core design principles of convenience, accessibility, safety, comfort and attractiveness taken from LTN 2/08. These requirements, which are common to both pedestrians and cyclists, need to be kept in mind throughout the design process.

Pedestrians

- 6.6** In most cases, pedestrian journey times will be unaffected after the implementation of shared use. However, journey times could increase for people who divert to another route because they feel uncomfortable using the new arrangement. Designers should aim to ensure that conversion to shared use does not result in the displacement of existing users.

- 6.7** Conflict between pedestrians and cyclists is not a common occurrence – see *How People Interact on Off Road Routes: Phase 2*, CRN69 (Countryside Agency, 2003), and *Shared Use Operational Review* (Atkins, 2012). Nevertheless, perception of reduced safety is an important issue for consideration, because it has a bearing on user comfort, especially for older people and disabled people.
- 6.8** Converting a footpath or footway to shared use will often result in less space for pedestrians to some extent (especially where the route is segregated). This aspect needs to be carefully managed to ensure that pedestrians have sufficient width after conversion.
- 6.9** Pedestrians can benefit from shared use schemes by, for example, the introduction of better surfacing or upgraded lighting.
- 6.10** People with certain disabilities, and older people, often express concern about shared use proposals. If a significant proportion of these groups is likely to use the route, it might be necessary to make modifications to meet their particular requirements.

Cyclists

- 6.11** LTN 2/08 gives detailed advice on the geometric design of cycle routes.
- 6.12** A common reason for taking cyclists off the carriageway is the perception that it will improve safety. However, it is important to understand that a shared use route will not necessarily be safer than an on-carriageway alternative. In particular, careful consideration is needed where a cycle track running alongside a road crosses side a road – see Figure 6.1. At these locations, there is significant potential for conflict, which can sometimes negate the safety benefits of segregating cyclists from motor vehicles. Section 10.3 of LTN 2/08 discusses this in greater detail.
- 6.13** Where cycle tracks alongside roads accommodate two-way flow, the potential for conflict can increase significantly. It is probable that drivers are less likely to expect cyclists to come from both directions because, intuitively, they might assume cyclists would be travelling in the same directions as traffic in the adjacent part of the carriageway – see Figures 6.1 and 6.2.
- 6.14** Another reason for taking cyclists off the carriageway might be to provide a more convenient route. However, journey times can increase if the route is discontinuous or it takes cyclists out of their way (coherent and consistent route signing can help here).
- 6.15** A key aim in designing for cyclists is to help them minimise their energy expenditure. Measures that help include:
- choosing a route that minimises vertical peaks and troughs (see paragraph 5.12 and Figure 6.3);
 - minimising gradients;
 - designing out the need for cyclists to slow down or stop; and
 - providing a smooth running surface.

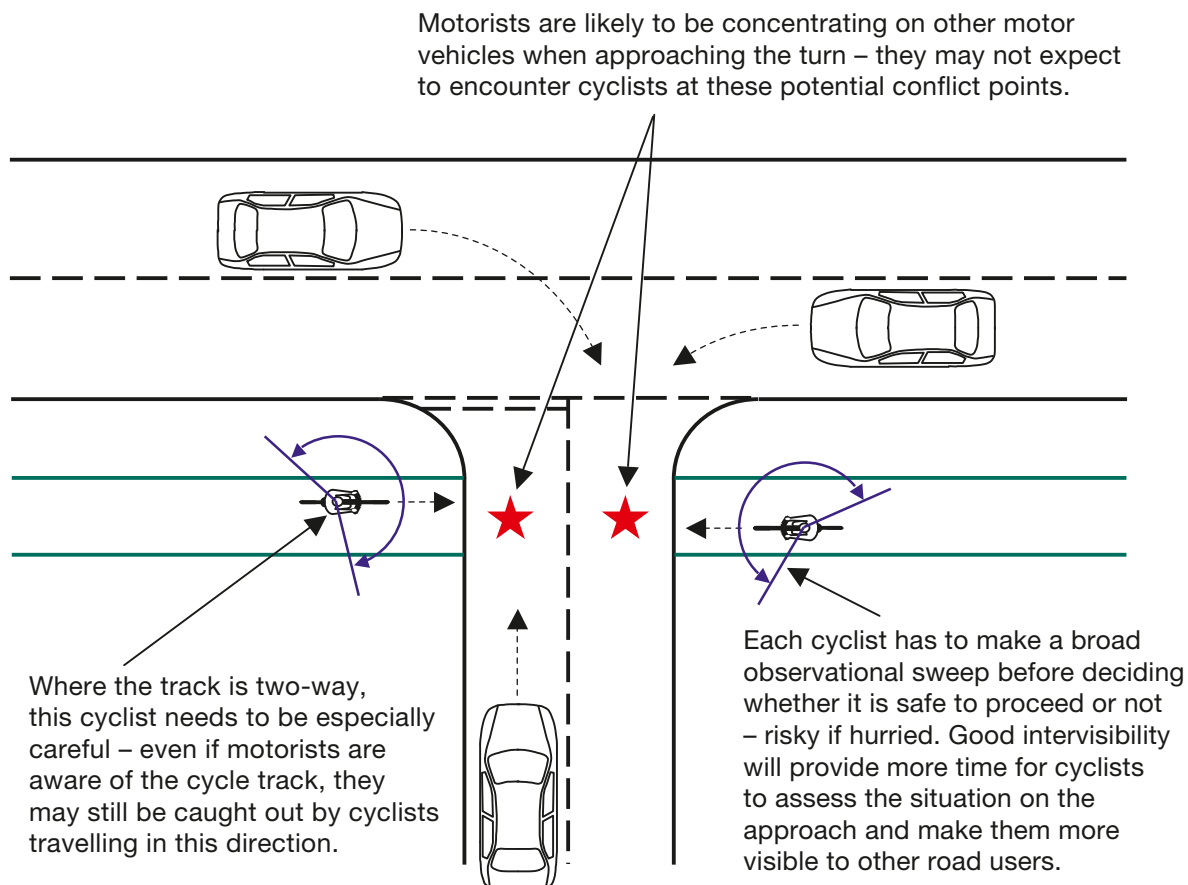


Figure 6.1 Potential conflict issues at cycle crossings near junctions



Figure 6.2 Potential for increased conflict where cycle track is two-way

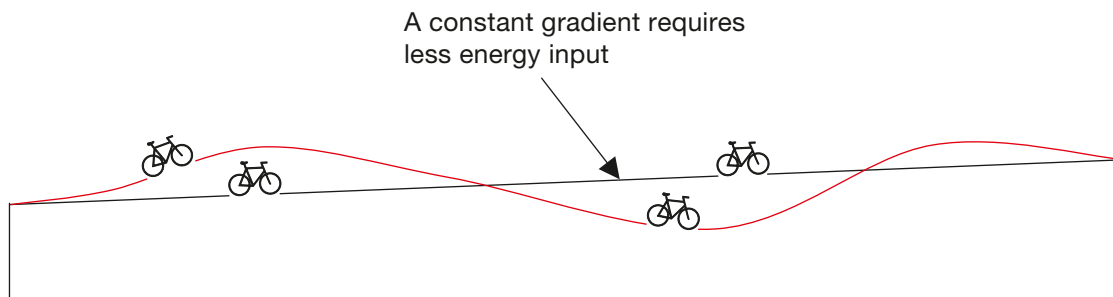


Figure 6.3 Minimising energy expenditure through vertical alignment



Photo: steinhardt #20124 CycleStreets, CC Attribution-Share Alike licence

Figure 6.4 Tricycle user

- 6.16** Many older people cycle, and some disabled people use cycles as a mobility aid. A high-quality shared use route can make it easier for them to remain active. Some use tricycles (Figure 6.4), and it is important that physical restrictions such as bollards or barriers do not prevent their access to shared use routes.
- 6.17** Where a cycle track on a new alignment is created, it is likely that pedestrians will also wish to use it. Suppressed demand could be significant, especially where the new alignment is more convenient than alternative pedestrian routes. While such a route might be aimed primarily at improving conditions for cyclists, designers need to consider its use by pedestrians. Depending on demand, measures required to accommodate pedestrian use could have a significant impact on the design.

- 6.18** *Guidance on the Use of Tactile Paving Surfaces* (DfT, 1998) recommends that, where the route is segregated, ladder/tramline tactile paving should be laid over a length of 2.4 metres at the start of the route. There is anecdotal evidence that the tramline pattern over this length can cause instability problems for cyclists. As such, practitioners might wish to consider reducing this dimension to 800 mm.
- 6.19** Corduroy paving is sometimes wrongly used in place of ladder/tramline. Not only is this misleading for blind or partially sighted people, but it exacerbates the cycle instability problems caused by tramline paving. If corduroy is used correctly on a shared use route, cyclists should never have to cycle over it.

Frontagers

- 6.20** The effect of a shared use proposal on frontagers needs to be considered, particularly where, for example:
- the frontages are retail premises or other significant pedestrian attractors;
 - it is possible that delivery bays or parking spaces will need to be removed;
 - heavy cycle flows pass close to the front doors, windows or driveways of residential dwellings (especially where visibility is limited); and
 - it will be necessary to acquire land from frontagers through compulsory purchase orders.

Signing and the environment

- 6.21** As with cycle infrastructure in general, shared use routes can be visually intrusive if not designed sensitively. It should be borne in mind that, apart from terminal signs, signs and markings associated with a shared use facility are only likely to benefit pedestrians and cyclists, and even then may not always be necessary. A good starting position is to consider what signing is required as a legal minimum. Then, before adding anything else, consider who can act on information provided by any additional signing and whether they need the information in the first place.
- 6.22** For example, where a shared use route runs directly alongside a high speed carriageway and is separated from it by a kerb, any buffer zone provided should **not** be marked with a white line. A line here is unlikely to be of much (if any) benefit to cyclists, in which case it simply represents unnecessary clutter and expense. Of greater concern in this particular example are the safety implications of drivers confusing it for an edge-of-carriageway line at night.



Photo: timbo #10336 CycleStreets, CC Attribution-Share Alike licence



Photo: progcovers #21358 CycleStreets, CC Attribution-Share Alike licence

Figure 6.5 Examples of excessive versus uncluttered signing

- 6.23** Vertical signing for shared use routes is often over-specified. The first image in Figure 6.5 is an example. There are far too many signs, and they are larger than required for repeater signs, which only need to be seen by pedestrians and cyclists. In addition, the sign posts extend above the sign faces, which further detracts aesthetically. The second image in Figure 6.5 is a considerable improvement, although the sign diameter could still be considered to be more than required for a repeater sign.
- 6.24** It is worth noting that, while the *Traffic Signs Manual* Chapter 3 (DfT, 2008) gives advice on signing shared use routes, practitioners need to carefully consider which signs are actually necessary. The Traffic Signs Regulations and General Directions (TSRGD) 2002 have been revised in the latest amendment regulations (Traffic Signs Regulations (Amendment) (No. 2) and General Directions (TSRGD) 2011, SI 3041) to require a minimum of one repeater sign, in place of the earlier need to provide them at regular intervals, thus giving designers the flexibility to place only those signs they deem necessary. (The *Traffic Signs Manual* Chapter 3 will be updated accordingly in due course.)
- 6.25** Coloured surfacing is not generally recommended for shared use. It is best reserved for the carriageway where it can be useful in highlighting cycle infrastructure markings at critical points, such as a non-nearside cycle lanes or cycle lanes passing the mouths of side roads. On shared use routes, coloured surfacing can be very detrimental to the streetscape – see Figures 6.6 and 7.4.



Photo: Alex Sully

Figure 6.6 Posts obstructing a shared use route

- 6.26** When converting a footway to shared use, it is particularly important to try to ensure pedestrian and cyclist movement is relatively unobstructed by sign posts, lamp columns, etc. (see Figure 6.6). If this is not possible, the footway might not be suitable for conversion.
- 6.27** In rural areas, there needs to be a balance between providing a facility that is adequate for the requirements of pedestrians and cyclists, and avoiding urbanisation through surfacing, signs and lighting, etc. As flows are likely to be lower in rural areas, there might be less need for segregation.
- 6.28** Other possible environmental effects in rural areas include:
- general aesthetic changes (good and bad);
 - loss of wildlife habitat (although carefully designed routes can improve wildlife habitat);
 - light pollution; and
 - clutter arising from the need for increased signing.

Lighting

- 6.29** Lighting on shared use routes alongside roads is largely governed by existing levels of street lighting. Along unlit roads, particularly in rural areas, it is unlikely that providing lighting would be a practicable proposition.
- 6.30** For a shared use route away from the road, the decision to light it or not needs careful consideration. Where these routes are used primarily for recreation, it might not be necessary to light them, but this will depend on whether use is expected at night. However, designers need to note that, even where lighting is provided, some routes might not be well used after dark.
- 6.31** For some schemes, lighting can be important to successful operation, and each case needs to be considered on its merits. LTN 2/08 provides more advice, and technical design guidance can be found in TR23, *Lighting of Cycle Tracks* (ILE, 1998).

Costs

- 6.32** Apart from design and construction, practitioners need to allow for the cost of public consultation and engagement, order preparation and publication, any land purchases, and possibly a public inquiry. Where land is to be acquired through compulsory purchase, the programme needs to allow for the time taken to effect the necessary procedures, which might impinge on year-to-year budgeting.
- 6.33** There might also be costs associated with statutory undertakers' apparatus. Where apparatus needs diversion or protection works, costs can be considerable, even for relatively small schemes.
- 6.34** Providing a fully segregated shared use facility can add considerably to scheme costs, depending on the type of segregation proposed.
- 6.35** The cost of maintaining a shared use route needs to be considered. Failure to address whole-life costs at the design stage might result in a scheme that is too expensive to maintain to the required standard.

Maintenance

- 6.36** Advice on cycle route maintenance and inspections is given in LTN 2/08 *Cycle Infrastructure Design and Application Guide AG26 (Version 2) Footway and Cycle Route Design, Construction and Maintenance Guide* (UK Roads Board, 2003). In addition, see *Well Maintained Highways – a Code of Practice for Highway Maintenance Management* (UK Roads Board, 2005), which was actually updated April 2012.
- 6.37** It is important that maintenance requirements are considered from the outset. Proper maintenance is essential if a shared use route is to remain attractive to pedestrians and cyclists. Unswept routes and surfaces in poor condition can create trip or skid hazards, and surface defects can reduce the effective width of the route.



Photo: progcovers #26424 CycleStreets, CC Attribution-Share Alike licence

Figure 6.7 Unchecked growth of vegetation leading to a reduced level of service

- 6.38** Overhanging vegetation is a particular hazard for visually impaired people, but it can also cause problems for cyclists and sighted pedestrians. Unchecked growth can affect sightlines on bends and reduce the usable width (see Figure 6.7). Disturbance of the surface due to root growth can create trip hazards and will affect ride quality. Unswept leaves can present slipping/skidding hazards in wet weather.
- 6.39** Regular inspection should be included in the highway authority's maintenance programme. Inspection is particularly important for routes located away from roads where faults and the need for remedial action can be easily overlooked. In addition, the lack of air movement from passing motor traffic means that these routes might need to be swept more frequently.
- 6.40** A site that is easy to maintain should be cheaper to clean and keep in good condition. A route that is accessible to mechanical sweepers, gritting machines, etc. helps considerably in this respect. Quad bike based machines are particularly suitable for maintaining routes away from the road.
- 6.41** To make maintenance easier, practitioners should aim to:
- avoid locations that are relatively inaccessible to cleaning operatives. Litter can collect in untrafficked 'dead' areas, narrow internal corners, etc.;
 - minimise signs and street furniture. Rationalising signing reduces the need for posts that can hamper cleaning operations;

- select slow-growing plant varieties and provide adequate set-back from the edge of the path where planting is an integral part of the scheme;
- design for maintenance by machine if practicable. This can be facilitated by easy access from the highway and adequate unobstructed width along the route;
- avoid under-specifying on materials or construction – the design needs to be appropriate for the particular circumstances. For example, an unbound surface might be acceptable in certain situations but could deteriorate prematurely in others; and
- check that the design achieves the right balance between initial outlay and long-term maintenance costs – a more expensive surface construction, for example, could have a lower whole-life cost.

6.42 For routes away from the road there may be opportunities to work with volunteers who could report defects, undertake minor maintenance and assist with route signing. Sustrans has a substantial network of volunteer rangers on the National Cycle Network (NCN) who work closely with local authorities and other organisations with route maintenance responsibilities. Their work is co-ordinated by Sustrans' regional offices, through whom all enquiries should be channelled. Whilst their main focus is on the NCN, some volunteer rangers work on other routes.

6.43 Application Guide AG26 (Version 2) *Footway and Cycle Route Design, Construction and Maintenance Guide* includes details for a light-vehicle category of cycle track construction that allows for the use of maintenance vehicles of up to 4 tonnes gross weight. Guidance on a range of surfaces suitable for pedestrians and cyclists can also be found in *Design Manual for Roads and Bridges, Provision for Non-Motorised Users* Volume 5, Section 2, Part 4, TA 91 (Highways Agency, 2005a).

Audit

6.44 Ideally, a well-designed shared use scheme would not require separate user audits for cyclists or pedestrians, because the designer should be taking their needs fully into consideration as a matter of course. However, there are many examples of shared use routes that fail in this respect. It is therefore recommended that practitioners conduct user audits in some form as part of the design process to help ensure that scheme objectives are being delivered.

6.45 Where shared use schemes form only a part of much larger projects, such as new housing developments or general road improvements, user audits assume greater importance.

6.46 Community street audits involving a range of pedestrians with different needs can be an effective way of informing the design and getting community 'buy-in' for the scheme. Living Streets provide advice on conducting community street audits (www.livingstreets.org.uk). Cycle audits are particularly useful where the route connects frequently with the road network, such as at side road crossings or points of access from the main carriageway.

- 6.47** Where two-way cycle tracks alongside roads are proposed, a cycle audit is strongly recommended. Two-way cycle tracks can increase the potential for conflict with motor vehicles at side road crossings (see Figure 6.1), and there might be safety issues regarding cyclists accessing a two-way track from the opposite side of a road (see paragraph 5.11).
- 6.48** Guidance on cycle audits is given in *Cycle Audit and Cycle Review Guidelines* (IHT, 1998). Guidance on assessing pedestrian facilities is available in *Guidelines for Providing for Journeys on Foot* (IHT, 2000). Advice on road safety audits is given in *Manual for Streets* (DfT, 2007), *Manual for Streets 2 – Wider Application of the Principles* (CIHT, 2010), and *Road Safety Audit* (IHT, 2008).
- 6.49** The *Manual for Streets* and *Manual for Streets 2* recommend that highway authorities should consider carrying out a balanced assessment of how well a scheme achieves its objectives through a Quality Audit. Further advice on Quality Audit is given in Traffic Advisory Leaflet 5/11 *Quality Audit* (DfT/CIHT, 2011).

7. Detailed design issues

Segregation

- 7.1** A key decision when introducing shared use is whether to segregate the route or not. An unsegregated route is the simplest option – it is relatively inexpensive, the least visually intrusive, easier to maintain and makes good use of the land available where width is limited. Figure 7.1 shows an example of unsegregated shared use.
- 7.2** However, omitting segregation will not always be appropriate, especially on busier routes. Segregation can increase the sense of safety, user confidence and user comfort, and it might be required for a particular scheme to operate satisfactorily. Nevertheless, segregation is not without its disadvantages, and designers need to understand them to ensure they do not outweigh the benefits.
- 7.3** Some forms of segregation are more effective than others. A general rule is that as the effectiveness of segregation increases, so do the width requirements. There could also be significant cost implications.



Photo: progcovers #34306 CycleStreets, CC Attribution-Share Alike licence

Figure 7.1 An example of unsegregated shared use

- 7.4** Where pedestrian movement is mostly linear and there is adequate width, segregation can work well. However, if pedestrian movement involves significant crossing manoeuvres, it might be better not to segregate. Wheelchair and mobility scooter users in particular might be unable to easily cross any physical dividing feature.
- 7.5** A concept gaining in popularity to assess how well a shared use route operates is Level of Service (see paragraph 7.53). Practitioners need to be aware that segregating a route will not always result in an improved level of service.
- 7.6** Previously, it has been considered good practice to segregate shared use routes wherever practicable. This approach appears to have been based on a presumption that there is considerable potential for conflict between pedestrians and cyclists on unsegregated routes. However, designers are increasingly being encouraged to take decisions appropriate to the scheme context rather than adopting certain features as a starting position in the design development process.
- 7.7** Moreover, research by the Countryside Agency, *How People Interact on Off Road Routes: Phase 2*, CRN69 (Countryside Agency, 2003) concluded that actual conflict is a rare occurrence, and this was borne out by a user perception study conducted as part of this work. It is interesting to note that the perception of conflict increased when participants were asked to recall events at a later date.
- 7.8** Research carried out to inform this LTN – *Shared Use Operational Review* (Atkins, 2012) – also considered the potential for conflict and compared a number of unsegregated routes with routes segregated by white line. No near misses or collisions were observed. The highest level of interaction observed was marginal conflict, i.e. unplanned interaction where cyclists or pedestrians slowed down or changed direction, but where movement was calm and controlled. It concluded from the observations that there was no evidence to suggest that segregation by white line materially reduces the potential for conflict.
- 7.9** It therefore follows that, when designers are planning a shared use facility, segregation need no longer be considered the starting position in the design process. This is not meant to imply a preference either way for segregation. It simply seeks to encourage designers to think through their decisions rather than start from a default position of implementing any particular feature.
- 7.10** In deciding whether (and, if so, how) segregation is to be implemented, each case will need to be considered on its merits with reference to:
- design objectives;
 - geometry and visibility (sight lines);
 - gradients;
 - available width;
 - frontages along the route;
 - the overall setting;

- movements across the route; and
- the volume and composition of different user types.

7.11 The advantages of effective segregation are that it can:

- increase user comfort and convenience; and
- accommodate higher cycle speeds.

7.12 Effective segregation can be useful where, for example:

- the route is intended to accommodate significant flows of cyclists, especially high speed flows;
- large flows of pedestrians and cyclists are expected at the same time;
- the number of cyclists relative to pedestrians is expected to be high;
- predominant user movements are along rather than across the facility;
- heavy cycle flows pass numerous frontages;
- a significant proportion of vulnerable users is likely to use the facility; and
- there are high levels of non-travelling users (e.g. people congregating at an attraction, shoppers, etc.).

7.13 However, practitioners need to appreciate the implications of providing segregation, so that they do not inadvertently make conditions worse. Some disadvantages of segregation are that:

- splitting the route reduces the width available to both user groups;
- physical segregation features further reduce effective widths;
- to maintain effective widths, land take increases;
- kerbs or barriers can make crossing movements difficult, particularly for wheelchair users;
- white line segregation is often ignored;
- implementation costs might be significantly higher; and
- maintenance might be more difficult.

7.14 Table 3 of *The Merits of Segregated and Non-Segregated Traffic-Free Paths* (Phil Jones Associates, 2011) expands on the above list.

7.15 Segregation methods generally fall into one of the following categories:

- level surface segregation;
- segregation by level difference; and
- segregation by barrier.

Level surface segregation

7.16 Level surface segregation does not rely on any appreciable difference in level between the pedestrian and cyclist sides. The most common form of level surface segregation feature is the white line (see Figure 7.2).

7.17 Research (*Shared Use Operational Review* (Atkins, 2012)) was carried out to investigate how effective white lines (including raised white lines) perform as segregators. In general, white line segregation was ineffective in ensuring a high degree of user compliance.

7.18 The cases studied were on relatively narrow routes where the average overall width was 3.5 metres. Where width is greater, compliance with white line segregation is less likely to be an issue. Regardless of this, conflict was not found to be a problem. Table 7.1 shows some of the advantages and disadvantages of level surface segregation.



Photo: Rob Ainsley #22398 CycleStreets, CC Attribution-Share Alike licence

Figure 7.2 Segregation by white line

Table 7.1 Level surface segregation

Type	Advantages	Disadvantages
White line (TSRGD* diag. 1049)	Inexpensive Minimal width take-up Easier to maintain than physically segregated routes	Not detectable by tactile means Often ignored Might be visually intrusive
Raised white line (TSRGD* diag. 1049.1)	Detectable by tactile means Inexpensive Minimal width take-up Easier to maintain than physically segregated routes	Can be difficult to construct properly, which might present a trip/cycle hazard Often ignored Can impede surface drainage unless gaps are provided Might be visually intrusive
Contrasting surfaces e.g. a block paved footpath alongside an asphalt cycle track	Might be detectable by tactile means Minimal width take-up Easier to maintain than physically segregated routes	Likely to be ignored
Surface texture, e.g. a grass median strip	Detectable by tactile means Inexpensive Can be easier to maintain than physically segregated routes	Takes up more width than a white line

* Traffic Signs Regulations and General Directions (2002)

Segregation by level difference

- 7.19** In most cases, segregation by level difference means a raised pedestrian way segregated from the cycle track using a kerb. Figure 7.3 shows a particularly well designed example. From an economic point of view, level difference segregation is best suited to new build. Retro-fitting existing routes can add significantly to costs.
- 7.20** Kerbs create a physical barrier that is more likely to encourage higher levels of user compliance. They can also make the route more attractive to pedestrians. Cyclists might also benefit, as long as track width and sightlines are sufficient.
- 7.21** Where segregation needs to be more effective than that provided by, say, a white line, the choices are essentially limited to segregation by kerb or segregation by barrier. Of these, a kerb is generally the preferred method of segregation, particularly by blind or partially sighted people who use raised kerbs as a navigational aid. In addition, kerbs do not suffer from some of the disadvantages of barrier segregation.



Photo: Alex Sully

Figure 7.3 Shared use segregated by kerbed level difference

- 7.22** High kerbs are unlikely to be necessary – a height of 50 mm should be more than adequate to deter cyclists from mounting the footway/footpath. Lower kerbs are easier for disabled people to cross and are simpler to drop to track level where people need to cross.
- 7.23** In general, kerb segregation is considerably more expensive than white line segregation. It is also likely to be more expensive than barrier segregation. Table 7.2 shows some of the advantages and disadvantages of segregation by level difference.

Table 7.2 Segregation by level difference

Type	Advantages	Disadvantages
Shared use route segregated by kerb	Detectable by tactile means Effective	Can be a hazard for cyclists if width is limited. Can be very expensive compared with level surface segregation. Likely to be more expensive than barrier segregation. Might make maintenance more difficult. Some additional width required. Can be difficult for wheelchair users if width is inadequate. Can present a barrier for some disabled people.



Photo: kbrumann #16687 CycleStreets, CC Attribution-Share Alike licence

Figure 7.4 Shared use segregated by barrier

Segregation by barrier

- 7.24** Barriers (see Figure 7.4) are not generally recommended. They reduce the effective route width more than kerbs do and they can present a significant hazard to cyclists. They can also trap people on the wrong side. For these reasons, where barriers are used, it is recommended that they are only used in short lengths – over any appreciable distance, the risks of cycle handlebars or pedals colliding with the railing, or users becoming trapped on the wrong side, are usually of greater concern than the risk of occasional non-compliance by either user group.
- 7.25** Barriers suffer from the same problems as do kerbs but, generally, the disadvantages are exacerbated – for example, they present a greater hazard to cyclists and they require larger increases in width to maintain effective widths. They can also have a significant impact on maintenance procedures, possibly making the use of mechanical sweepers impracticable.
- 7.26** Where adequate width is available, hedges or shrubs can be used as a barrier. However, vegetation can increase maintenance requirements considerably. Regular maintenance is essential if problems such as the accumulation of seasonal debris and overhanging growth are to be avoided. Hedges or shrubs should be slow-growing varieties without thorns. Vegetation takes up more width than railings or walls, and additional width will be needed to accommodate growth between cutting operations. It is important to ensure that the height of growth is also kept under control to avoid creating concerns over personal security.

7.27 Table 7.3 shows some of the advantages and disadvantages of segregation by barrier.

Table 7.3 Segregation by barrier

Type	Advantages	Disadvantages
Wall, railings	Detectable by tactile means Effective	Can be a hazard for cyclists, especially where width is limited. Can trap users on the wrong side. Can seriously hamper maintenance. Significantly reduces effective width so route will need to be wider overall. More expensive than level surface segregation. Might be visually intrusive.
Row of bollards	Detectable by tactile means	Can present a significant hazard for cyclists and visually impaired people. Likely to be ineffective. Can seriously hamper maintenance. Significantly reduces effective width so route will need to be wider overall. More expensive than level surface segregation. Might be visually intrusive.
Planting, e.g. hedges	Detectable by tactile means Effective Can be aesthetically pleasing	Can trap users on the wrong side. Can seriously hamper maintenance. Significantly reduces effective width so route will need to be wider overall. Unchecked growth can reduce route comfort and capacity. More expensive than level surface segregation. The vegetation requires maintenance.

Width requirements

- 7.28** Width strongly influences the quality of shared use routes – insufficient width tends to reduce user comfort and increases the potential for conflict between pedestrians and cyclists. In preparing this section, the opportunity was taken to update the advice given in LTN 2/08. In general, **section 8.5 of LTN 2/08 is now superseded.**
- 7.29** The following advice on minimum width requirements relates to what is generally desirable in order to provide a high level of service to pedestrians and cyclists, but see paragraph 7.32. Achieving these dimensions gives no guarantee that the route will be wide enough – additional width might be required as flows increase.
- 7.30** Designers should generally aim to provide more than the minimum, regardless of flow rates. In addition, where gradients are steep, climbing cyclists might wobble to some extent, and descending cyclists can quickly gain speed. In both cases, additional width is helpful, even if it is only localised. There might be occasional pinch points along the route where the minimum dimensions cannot be met. such pinch points might be acceptable on less busy routes.
- 7.31** It might not always be possible to meet the minimum recommendations for the route as a whole. In this case, practitioners need to consider whether a new sub-standard facility is better than none. For example, on lightly used routes, especially rural shared use routes that avoid high speed roads which have no specific provision for pedestrians or cyclists, a narrow route might represent a considerable improvement on existing conditions.



Photo: spokesgroup #30779 CycleStreets, CC Attribution-Share Alike licence

Figure 7.5 Substandard width on both sides due to segregation

- 7.32** There might be situations, again particularly in rural areas, where flows are so light that the likelihood of two users encountering each other is very low. In this case, the minimum widths given below might be far more than are necessary (or desirable from an environmental point of view). The acceptability of width below the minimum recommended here is something for the designer to determine but, in any case, at the very least two wheelchair users should be able to pass one another, even if this involves the use of passing places.
- 7.33** Where room is limited, any plan to segregate a route needs careful consideration. In general, narrower routes might be best left unsegregated, especially where splitting the route would reduce the widths available for pedestrians or cyclists to near their minimum values – see Figure 7.5. A balance needs to be struck between possible benefits of segregating users and the disadvantages of reducing the space available to both groups.
- 7.34** A width of 3 metres should generally be regarded as the preferred minimum on an unsegregated route, although in areas with few cyclists or pedestrians a narrower route might suffice. Where a significant amount of two-way cycling is expected, additional width could be required. However, the need here for additional width is not clear cut, because the absence of segregation gives cyclists greater freedom to pass other cyclists. It might therefore depend on user flows.
- 7.35** Note here that 3 metres is the preferred minimum *effective* width, and this will be the *actual* width where the route is not bounded by vertical features (see Figure 7.6).

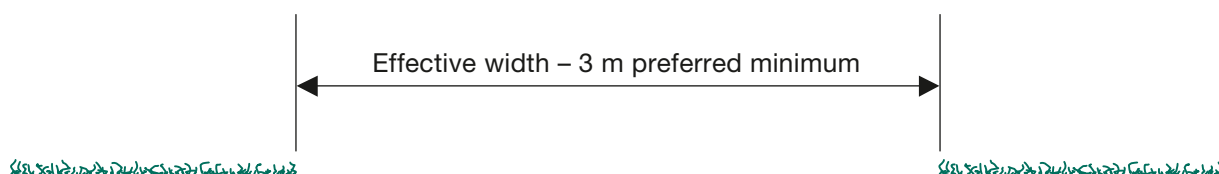


Figure 7.6 Unsegregated shared use route

- 7.36** Figure 7.7 shows an example of unsegregated shared use alongside a typical urban carriageway. In this case, the vertical edge features create the need for additional width – see Table 7.4. Where a route (segregated or otherwise) passes alongside a high speed road, it is recommended that the clearance to the kerb is increased as shown to provide a buffer zone. Paragraph 7.60 gives more advice on high speed roads and buffer zones.

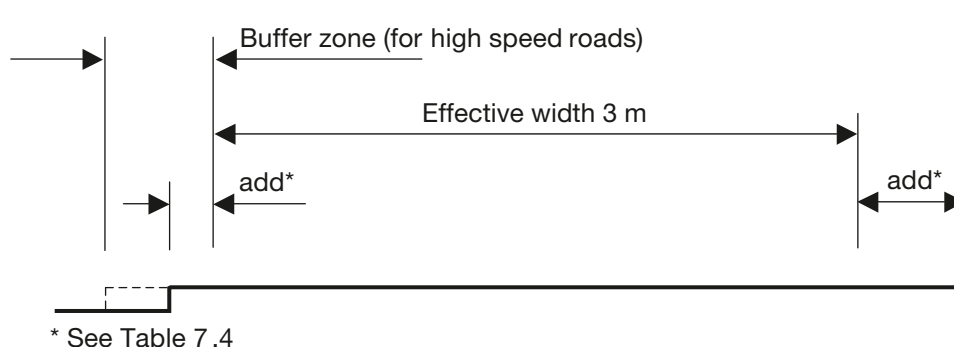


Figure 7.7 Unsegregated shared use bounded by vertical features

- 7.37** Where sign posts or lamp columns are present, they should be located outside the effective width zone where possible.
- 7.38** On segregated shared use routes, and where cycle flow is predominantly one-way, the preferred minimum effective width on the cycle track side is 2 metres. This will allow for the occasional overtaking manoeuvre and will easily accommodate users of cycle trailers, tandems, tricycles, etc. The preferred minimum effective width for a two-way cycle track is 3 metres. These effective widths will need additional clearance where track edge constraints such as kerbs or walls are present (see Table 7.4).
- 7.39** As a general rule, for any shared use route (segregated or otherwise) away from the road, it can be assumed that cyclists will want to travel along the route in both directions.
- 7.40** *Inclusive Mobility – A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure* and the *Manual for Streets* recommend a minimum clear width of 2 metres for footways. *Inclusive Mobility* states that, where this is not possible because of physical constraints, 1.5 metres could be regarded as the minimum acceptable under most circumstances. However, this might not be sufficient for wheelchair users or people with child buggies to pass one another comfortably. As such, a footpath or footway 1.5 metres wide is generally best suited to routes using level surface segregation and where flows are low. This makes it easy for people on the pedestrian side to partially occupy the cycle track when the occasional need arises.
- 7.41** Figure 7.8 shows how these minimum widths apply to a route segregated by white line, where cycle flow is assumed to be predominantly one-way. As there are no physical outer edge constraints on either side of the cycle track in this example, the effective width here is the actual width.

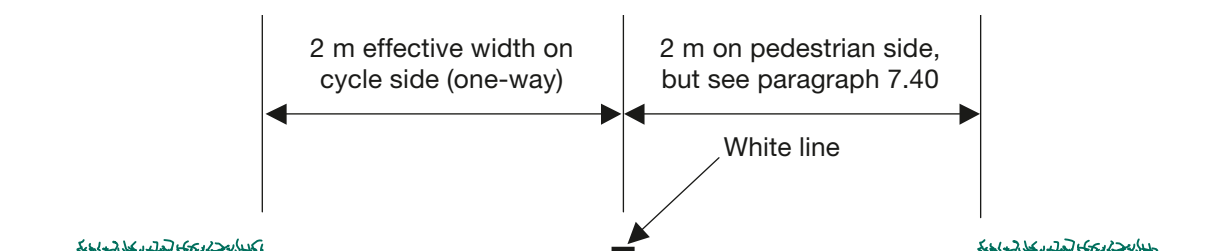
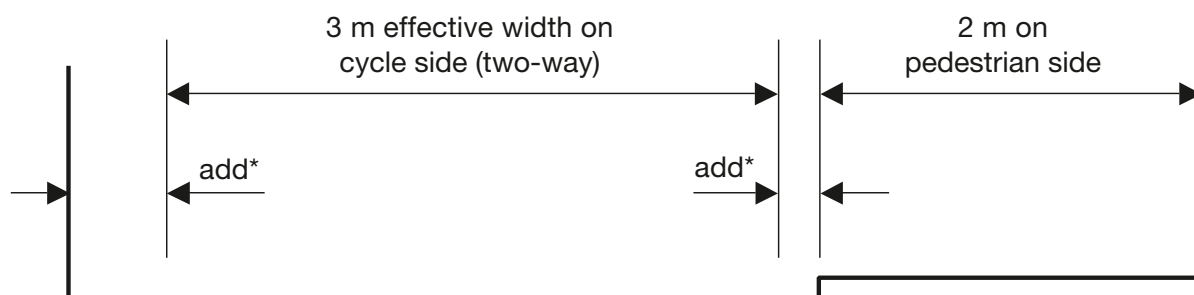


Figure 7.8 Level surface segregation example

- 7.42** Where the route is segregated by kerb, a minimum width of 2 m is recommended on the pedestrian side. This will allow two wheelchair users to pass comfortably. Narrowing to 1.5 m might be acceptable for short stretches.
- 7.43** Figure 7.9 shows how the minimum widths apply to a route segregated by kerb. In this example, cycle flow is assumed to be two-way, and the outer edge of the cycle track is physically constrained.



* See Table 7.4

Figure 7.9 Physical segregation example

7.44 Table 8.2 in LTN 2/08 gave additional clearances for different types of edge constraint, such as kerbs or walls. These width increases applied to the pedestrian and cycle sides alike. However, while these increases are of considerable importance for the safety of cyclists, they are of less value to pedestrians. In addition, adding these clearances to the pedestrian side introduced some inconsistency with the recommendations given in *Inclusive Mobility* and *Manual for Streets*.

7.45 In this LTN therefore, the advice on additional clearances has been revised and the values given here relate to the cycle track only – see Table 7.4. Note that where a shared use route is unsegregated, any such additions will apply to both sides of the route (see Figure 7.7) because cyclists can use its full width.

7.46 Table 7.4 introduces a further amendment to Table 8.2 of LTN 2/08. The additional clearance of 250 mm now applies to vertical features from 150 mm to 600 mm high (previously it was for features from 150 mm to 1200 mm high). This change recognises the fact that features between 600 mm and 1200 mm high can have a similar potential to come into contact with handlebars as do features higher than 1200 mm.

Table 7.4 Additional clearances to maintain effective widths for cyclists

Type of edge constraint	Additional width required to maintain effective width of cycle track in mm
Flush or near-flush surface	No additional width needed
Kerb up to 150 mm high	Add 200
Vertical feature from 150 to 600 mm high	Add 250
Vertical feature above 600 mm high	Add 500

7.47 Table 7.5 summarises the minimum width recommendations for pedestrians and cyclists.

Table 7.5 Minimum widths summary

Type		Minimum widths
Unsegregated shared use		3 m preferred (effective)*
Segregated shared use	Pedestrian path unbounded on at least one side, e.g. segregated by white line	1.5 m (actual)
	Pedestrian path bounded on both sides	2 m (actual)
	One-way cycle track	2 m preferred (effective)*
	Two-way cycle track	3 m preferred (effective)*

* Additional width is needed where there are edge constraints – see Table 7.4

Pedestrian and cycle flows

- 7.48** For shared use routes, capacity is unlikely to be a constraint. Before capacity is reached, a shared use route will tend to become uncomfortable to use. Comfort will be influenced by a range of factors, such as the ratio of pedestrians to cyclists, the type of journeys being made and the extent to which people walk in groups. For any particular path, these factors will often differ substantially by time of day and by day of the week.
- 7.49** Table 7.6 lists a number of sources of advice on user flows. It can be seen that there is little consistency in the values – when expressed in terms of users per hour per metre width, they range from 25 to 180. This LTN, therefore, does not include any recommended flow values.
- 7.50** As a first step, practitioners might wish to determine the comfortable level of use of a potential scheme by observing existing shared use routes carrying flows similar to those expected.
- 7.51** It is worth putting the range of values in Table 7.6 into perspective. The figures of 180 and 25 users per hour average out as three users per minute, and one user about every two and a half minutes, respectively. This is quite a simplistic first approximation. In practice, flow is not uniform. Group size itself might then become the dominant factor, especially where width is limited.
- 7.52** It can be seen from Table 7.6 that, at a value of, say, 120 users per hour per metre width (2 per minute), the flow appears to be quite conservative, even on an unsegregated route at its minimum recommended width. It seems likely, therefore, that, on wider routes, flows considerably in excess of 180 users per hour per metre width might be comfortably accommodated.

Table 7.6 Various sources of advice on user flows

Source document*	Suggested flows	Comments
DfT – Local Transport Note 2/86 <i>Shared Use by Cyclists and Pedestrians</i> .	Combined peak flows of 180 cyclists and pedestrians per hour per metre width for routes with a 500 mm clearance margin to the carriageway	This figure was derived from surveys of routes with level surface segregation.
Countryside Agency – <i>Greenways Handbook</i>	200 users per hour	No indication of route width given.
CROW Design Manual for cyclists (Netherlands)	25 pedestrians per hour per metre width on traffic-free paths away from town centres.	
Countryside Agency – <i>How People Interact on Off Road Routes</i> , Phase I and II research	At least 100 users per hour on 3 m path	Actual and perceived conflict was found to be low at these flow levels.
Federal Highway Administration (USA)	150 users per hour on 3 m path	Level of Service C, taken from look-up table, assuming average modal split.

(*See References section for details.)

7.53 The last row in Table 7.6 refers to Level of Service (LoS). This is a concept aimed at quantifying how well a route performs for its users. LoS has been used outside the UK and is being developed for use by Transport for London. The Sustrans report *The Merits of Segregated and Non-Segregated Traffic-Free Paths* (Phil Jones Associates, 2011) includes a review of level of service measures in other countries. It identifies a number of models and provides guidance on their possible application to designing shared use in the UK (but with caveats).

Provision alongside carriageways

7.54 Where a footway is converted to shared use, care is required to ensure the route is not unduly obstructed by lighting columns, signs and other street furniture. The cycle track should normally be located on the carriageway side of a segregated shared use route. This avoids placing pedestrians between cyclists and motor vehicles, it makes it easier for cyclists to leave or join the carriageway, and it reduces the potential for cyclists coming into conflict with drivers or pedestrians exiting from private premises along the route.

7.55 While placing cyclists nearest the carriageway is generally preferred when segregation is present, it can increase the potential for conflict between cyclists and people waiting at bus stops. Section 8.10 of LTN 2/08 *Cycle Infrastructure Design* suggests that conflict might be reduced by swapping the footway and cycle track positions over so that cyclists pass behind the bus shelter (where present) and any

people waiting. However, these crossover points can become areas of conflict, and the resulting markings add to visual intrusion. In view of this, it might be better in such situations to simply dispense with segregation altogether.

- 7.56** Where the route is frequently interrupted by side roads to be crossed (see Figure 6.1), or where there are numerous crossovers to private driveways (see Figure 7.10), shared use might be a less attractive option because of the increased potential for conflict at these locations and the need for cyclists to keep slowing down. In such cases, designers should consider whether cyclists would be better served by being kept in the carriageway.
- 7.57** Cyclists should have priority at vehicle crossovers to private accesses. However, where the cycle track crosses the mouth of a side road or an access road to commercial properties, giving cyclists priority needs careful consideration because of the potential consequences of a driver failing to recognise the need to give way. A good quality riding surface across the side road or access road might be more useful than giving the cycle track priority. A cycle track crossing can only be signed to give cyclists priority if it is located on a road hump (see Direction 34(2) of the Traffic Signs Regulations and General Directions 2002).
- 7.58** A cycle track without priority can also be taken across the road on a road hump – see Figure 7.11. This is a useful option – it avoids the potential problems of giving cyclists priority while, in many cases, cyclists will be able to cross without stopping, especially where visibility is good. Placing the crossing on a hump can also improve conditions for pedestrians. Other measures to consider include narrowing the carriageway, highlighting the crossing with contrasting surfacing and tightening nearby kerb radii. Cycle track crossings are discussed in more detail in LTN 2/08 *Cycle Infrastructure Design*.



Photo: timbo #14910 CycleStreets, CC Attribution-Share Alike licence

Figure 7.10 Driveways increase the potential for conflict on shared use routes



Photo: timbo #10400 CycleStreets, CC Attribution-Share Alike licence

Figure 7.11 Shared use crossing on a road hump

- 7.59** Where cycle priority at side roads is considered important, it might be best to keep cyclists in the carriageway, possibly through the provision of a hybrid cycle track (see paragraph 4.15).
- 7.60** For shared use routes alongside high speed roads (i.e. 85th percentile speed of 35 mph or more), user comfort and safety can be improved by maximising the separation distance between the carriageway and the shared facility to create a buffer zone – see Figure 7.12. For routes alongside trunk roads, the *Design Manual for Roads and Bridges* Vol 6 Section 3, Part 5, TA 90 (Highways Agency, 2005b) recommends a preferred separation between an NMU (Non-Motorised User) route and the carriageway of 1.5 metres, with an acceptable separation of 0.5 metres. It advises that a higher value of 1.5 metres should, where possible, be used on roads with speed limits in excess of 40 mph.
- 7.61** Buffer zones can be used to accommodate street furniture, etc., which might otherwise obstruct the cycle track. Where the buffer zone is surfaced in the same material as the cycle track, it is recommended that it is **not** marked in any way – it could be confusing to motorists, who might mistake a line for an edge of carriageway line at night, and in any case it is unlikely to be necessary (see paragraph 6.22).
- 7.62** The provision of a road restraint barrier between the facility and the carriageway can also improve safety (and comfort) because of the enhanced level of protection it gives pedestrians and cyclists. Visual/noise barriers might also be beneficial, but they require some consideration because they might give rise to security fears if

users feel isolated from the passive surveillance afforded by motorists. Barriers also reduce the usable width for pedestrians and cyclists, and they hinder movement onto and off the carriageway.

Road crossings

- 7.63** Guidance on cycle track road crossings is given in LTN 2/08.
- 7.64** Designers need to determine which type of crossing is appropriate for a given situation. On busy roads, it might be necessary to install controlled crossings for pedestrians and cyclists. The most common such arrangement is the Toucan crossing, where pedestrians and cyclists cross unsegregated. Where a segregated shared use route approaches a Toucan crossing, it is recommended that segregation stops short of the crossing – the waiting area for crossing should be fully shared.
- 7.65** Parallel crossings might be necessary at sites where there is greater potential for conflict between pedestrians and cyclists. They can be particularly useful where cycle flows are significant.



Photo: Chris Peck, CTC

Figure 7.12 Segregated shared use with buffer zone alongside carriageway

8. Stakeholder engagement

- 8.1** A properly designed shared use facility will serve pedestrians and cyclists well. Stakeholder involvement is key to optimising the design to help bring this about. This chapter concentrates on shared use facilities created by the conversion of footways or footpaths, where stakeholder involvement is particularly important. However, involving stakeholders can also be useful when designing a shared use route on a completely new alignment away from the carriageway.
- 8.2** For simplicity, Figure 2.1 shows stakeholder involvement as a discrete stage, but in practice there is no fixed time when stakeholders should start to become involved. While stakeholder involvement tends to become significant once there is at least a basic design to consider, it can be very useful to engage with interested parties such as local community groups throughout. Early consultation with key groups can be particularly useful.
- 8.3** There is a legal requirement to carry out a certain amount of consultation for footpath conversions made under the Cycle Tracks Act 1984 (see Chapter 10). This chapter complements this requirement by recommending additional stakeholder engagement. It also extends these recommendations to footpath or footway conversions regardless of the legal process used.
- 8.4** It is likely to be beneficial to engage with the following, as appropriate, when creating any shared use route:
- the police;
 - statutory undertakers;
 - local residents and businesses;
 - developers of proposed new developments/schemes;
 - current users;
 - groups representing disabled people (including disabled cyclists);
 - rehabilitation/mobility officers for blind and partially sighted people;
 - disability/access officers within a local authority;
 - education authorities;
 - other local authorities;
 - cycle and pedestrian user groups;

- residents' associations;
- local environmental and amenity groups;
- public transport operators; and
- chambers of commerce.

- 8.5** It is important to engage with disabled people and older people (together with any local organisations representing them), as they are likely to be amongst the users most concerned about shared use proposals. It is also important to provide feedback – it might not be possible to resolve every issue raised, and explaining why this might be so helps alleviate concerns that comments have been ignored.
- 8.6** The views of statutory undertakers or others with apparatus in the vicinity are best sought at an early stage. They will need to assess the effects a proposed facility might have on access to their apparatus. Nearby schools or colleges can be expected to benefit from a new shared use facility, and their input to the design will help in checking how well the proposal is likely to serve their needs.
- 8.7** It is particularly important to involve local residents and business proprietors along the proposed route, and as many people as is practicable who currently use the route.
- 8.8** For engagement with interested parties to be meaningful, it is essential that they understand the implications of implementing any preferences they may have expressed. A prime example is when discussing possible segregation (but it could be any issue that requires some background knowledge to make an informed choice). Members of the public might intuitively feel that segregation always reduces the potential for conflict and any segregation is better than none, but they need to be made aware that this is not necessarily the case.
- 8.9** For example, a clearly marked cycle route through a pedestrianised area could lead to higher cycle speeds, and the potential for conflict increases further if people walk in the track. However, informing stakeholders in this way needs to be transparent and balanced – it is important they understand that any such advice is being provided to help them make a reasoned choice, not to coerce them into giving a particular answer.
- 8.10** Careful consideration needs to be given to the means by which scheme proposals are publicised and communicated to stakeholders, particularly to blind and partially sighted people. Liaising with local disability access officers and voluntary organisations can help here.
- 8.11** Traffic Advisory Leaflet 8/02 *Home Zones – Public Participation* (DfT, 2002b) provides a considerable amount of advice on how various user groups can be engaged, and the principles are relevant to shared use scheme development. Methods of public engagement may need to allow for people who need material to be translated into other languages.

- 8.12** Where appropriate, placing temporary notices along the route under consideration can be quite effective in attracting the attention of current users. Community street auditing (see paragraph 6.46) can be another useful way of involving the public.
- 8.13** Promoters should be ready to consider modifying the proposals (or even abandoning the scheme if need be) in the light of comments received. Shortly before a scheme is brought into operation, stakeholders who contributed to scheme development should be notified. A guided tour-type introduction to the scheme might be appropriate for some users.

9. Post implementation

- 9.1** Once a scheme has been introduced, monitoring will reveal if it is operating satisfactorily. In addition to recording how the route operates, monitoring should include collecting the views of stakeholders. Continuing dialogue with stakeholders will provide feedback and help to identify any operational problems that need to be addressed.
- 9.2** Comments collected should be categorised by respondent type (e.g. pedestrian or cyclist, resident or user). It is also useful to detail the categories further to identify groups of people with different needs, such as older people, wheelchair users, blind and partially sighted people, etc. This will help give an accurate picture of usage while putting the comments into context.
- 9.3** Prompt action might be needed if any particular features are causing problems. Remedial action might range from minor modifications (e.g. additional signs and markings), through major design alterations (e.g. substantial widening of the path), to the abandonment of shared use altogether.
- 9.4** In addition to involving stakeholders prior to implementation, it might be necessary to publicise a shared use scheme some time after implementation to continue raising awareness of it and to help ensure that people understand how it is meant to be used.

10. Legal issues

- 10.1** These notes are for guidance only. Practitioners will need to obtain their own legal advice before acting on information provided in this chapter. Further advice on legal issues related to shared use can be obtained from *Cycle Schemes and Legal Procedures* (Cycle England, 2009), available from www.ciltuk.org.uk. Note that some of the procedures described below are expected to change as a result of the Government's Red Tape Challenge initiative.
- 10.2** A shared use route can be created by converting an existing footway or footpath, or by constructing the facility on a new alignment. Where the route is unsegregated, its full width is a cycle track on which there is a continued right of way on foot. For segregated facilities, only part of the width is a cycle track – the remainder is a footway or footpath on which cyclists cannot legally ride. People on foot normally retain a right of way on a cycle track.

Route definitions

- 10.3 Footway:** A way comprised in a highway, which also comprises a carriageway, being a way over which the public have a right of way on foot only [section 329(1) Highways Act 1980]. A footway is often referred to as the pavement.
- 10.4 Footpath:** A highway over which the public have a right of way on foot only, not being a footway [section 329(1) Highways Act 1980].
- 10.5 Cycle Track:** A way constituting or comprised in a highway, being a way over which the public have the following but no other, rights of way, that is to say, a right of way on pedal cycles (other than pedal cycles which are motor vehicles within the meaning of the Road Traffic Act 1988) with or without a right of way on foot [section 329(1) Highways Act 1980]. The words in round brackets were inserted by section 1 of the Cycle Tracks Act 1984. Cycle tracks might be created through conversion of a footway or footpath, or by constructing a new highway.
- 10.6 Bridleway:** A right of way on horseback and on foot. The Countryside Act 1968 gave cyclists the right to use bridleways, but cyclists are required to give way to horse riders and pedestrians. A bridleway can be subject to an order or by-law prohibiting cycling on part or all of it.
- 10.7 Restricted Byway:** A way generally open only to pedestrians, cyclists, horse-riders and horse-drawn vehicles. it replaces the former category of Roads Used as Public Paths (RUPPs), although some RUPPs may have become BOATs (see below). The definition was created by the Countryside and Rights of Way Act 2000.

- 10.8 Byway Open to All Traffic (BOAT):** A BOAT has full public rights, including for motor vehicle users, but rarely has a sealed surface and is generally used in a similar way to footpaths and bridleways. The definition was created under the Wildlife and Countryside Act 1981.
- 10.9 Public Rights of Way (PROW):** These comprise Footpaths, Bridleways, Restricted Byways and Byways Open to All Traffic. All public rights of way are highways and are shown on the Definitive Map held by local highway authorities, which is required to be constantly reviewed and updated.

Transport device definitions

- 10.10 Bicycle:** In law, a bicycle is considered a vehicle as a consequence of the *Ellis v Nott-Bower* judgment in 1896. A bicycle is also considered a carriage by section 85 of the Local Government Act 1888.
- 10.11** The Pedal Bicycles (Safety) Regulations 2010 state that a ‘bicycle’ means a two-wheeled vehicle that is propelled solely by the muscular energy of the person on that vehicle by means of pedals and has not been constructed or adapted for propulsion by mechanical power.
- 10.12** Pedal cycles must comply with the Pedal Cycle (Construction and Use) Regulations 1983, which define a ‘pedal cycle’ as a pedal cycle not propelled by mechanical power. The C&U regulations require every bicycle with a seat height of 635 mm or more to have a brake on the front and rear wheels. However, if one of the wheels cannot rotate independently of the pedals, then only a front brake is required.
- 10.13 Electrically assisted pedal cycle (EAPC):** These come under the 1983 EAPC regulations and can legally be ridden where ordinary pedal cycles are allowed, but only by someone aged 14 years or more. They are not classed as motor vehicles for the purposes of road traffic legislation.
- 10.14** The requirements for a conventional (single-seat) assisted bicycle are that it:
- has a motor not capable of exceeding 200 W continuous output;
 - weighs not more than 40 kg unladen;
 - has pedals that can propel the machine; and
 - has a motor that does not apply power above 15 mph.
- 10.15** If the machine is a tricycle, the above applies, except that the motor can deliver up to 250 W continuous output and the unladen weight limit is 60 kg.
- 10.16** EAPCs can be excluded from a cycle track through a Traffic Regulation Order under section 1 or 6 of the Road Traffic Regulation Act 1984.

10.17 Manual/electric wheelchairs and mobility scooters: These are classed as invalid carriages and are categorised thus:

- Class 1 – Manual, self propelled or attendant propelled wheelchairs.
- Class 2 – Powered wheelchairs and mobility scooters with a maximum speed of 4 mph.
- Class 3 – Powered wheelchairs and mobility scooters with a maximum speed of 8 mph

10.18 Invalid carriages can be used on footways, footpaths, bridleways or pedestrianised areas, provided that they are used in accordance with prescribed requirements. Users of invalid carriages have no specific right to use a cycle track, but they commit no offence in doing so unless an order or local by-law exists creating one.

10.19 Class 2 wheelchairs and mobility scooters are intended to be used predominantly on footways. Class 3 wheelchairs and mobility scooters are intended for use on footways and along roads. They can travel at up to 8 mph on roads, but must be fitted with a switch that reduces their top speed to 4 mph for use on footways.

10.20 Powered invalid carriages are not classed as motor vehicles for the purposes of road traffic legislation (Road Traffic Act 1988, section 185(1)). However, the Vehicle Excise and Registration Act 1994 requires that Class 3 wheelchairs and mobility scooters are registered with the Driver and Vehicle Licensing Agency for road use. They are exempt from vehicle excise duty, but are still required to display a valid (nil duty) tax disc.

10.21 Motor vehicle: For use on public roads, motor vehicles must be registered and fitted with a registration plate or plates. They must also be insured and taxed for road use, and they can only be operated by someone in possession of a driver's licence. Motor vehicles cannot normally be used on footways, footpaths or cycle tracks.

Cycle track creation procedures

10.22 Apart from cycle track conversions carried out under the Cycle Tracks Act 1984, public consultation is not a legal requirement. Nevertheless, in all cases it is strongly recommended that extensive consultation is carried out.

10.23 Converting a footway to a cycle track: The recommended way of converting all (or part) of a footway to a cycle track is through the Highways Act 1980. The appropriate part of the footway is 'removed' under the powers in section 66(4) of the Highways Act 1980, and a cycle track is 'constructed' under section 65(1). The process need not necessarily involve physical construction work other than the erection of suitable signs, but there needs to be clear evidence that the local highway authority has exercised its powers. This can be provided by a resolution of the appropriate committee or portfolio holder etc. to ensure that a clear audit trail has been established.

- 10.24** Public consultation is not a mandatory requirement. By virtue of the Road Traffic Act 1988, it is generally an offence to use a motor vehicle on a cycle track. A Traffic Regulation Order is therefore not required to control such use. However, if vehicular rights for private access existed on a route prior to conversion, these rights are not necessarily extinguished upon creation of the cycle track.
- 10.25** Some footway conversions have come about as a consequence of agreements under s278 of the Highways Act 1980 and s106 of the Town and Country Planning Act 1990. This also happens with new developments realised through agreements made under s38 of the Highways Act 1980. This approach is not recommended unless there is a clear audit trail setting out the authority to convert, accompanied by evidence of a consultation process that provides the opportunity for objections to the conversion to be heard. (Note that it is not possible to convert footpaths to cycle tracks using these powers.)
- 10.26** **Converting a footpath to a cycle track:** The recommended way of converting all (or part of) a footpath to a cycle track is to make a footpath conversion order under section 3 of the Cycle Tracks Act 1984 and the Cycle Tracks Regulations 1984 (SI 1984/1431). Detailed advice on the conversion of footpaths is contained in Circular Roads 1/86 (*Background to the Cycle Tracks Act 1984 and the Cycle Tracks Regulations 1984*).
- 10.27** Public consultation is a mandatory requirement for conversions carried out under the 1984 Act. The Regulations specify that, before making the order, a local highway authority has to consult:
- a. one or more organisations representing persons who use the footpath involved or who are likely to be affected by any provision of the proposed order;
 - b. any other local authority, parish council or community council within whose area the footpath is situated;
 - c. those statutory undertakers whose operational land is crossed by the footpath; and
 - d. the chief officer of police for the police area.
- 10.28** The level of consultation recommended in Chapter 8 exceeds this mandatory requirement. Where the footpath crosses agricultural land, the authority will need to obtain consent from the land owner(s). If there are no objections or objections are withdrawn, the order can be confirmed by the local highway authority. If there are un-withdrawn objections, the order can be confirmed by the Secretary of State, who may decide that a local public inquiry is first required.
- 10.29** **Creating a cycle route using permissive rights:** Permissive rights are useful where a landowner is willing to allow public use but does not want a permanent right of way to be created. Where the landowner is willing to allow a permanent right of way, he or she can dedicate the land as public highway, and this is a useful alternative in some cases.

- 10.30** A commonly used permissive agreement is where the local authority (or another party) purchases an interest in the land, constructs a path and then allows the public to use it. The land interest can be:
- freehold, which gives a permanent interest; or
 - leasehold, which gives an interest for the period of the lease, e.g. 125 years; or
 - licence, which comprises permission to construct and permission for the public to use.
- 10.31** The Department does not encourage the use of permissive rights by licence, because licences can be withdrawn at short notice and at any time. Where a local authority owns a footpath, or where the footpath is maintained at public expense, the preferred option would be to introduce higher-level rights for users by upgrading it to a Cycle Track, Restricted Byway or Bridleway. Otherwise, permissive rights based on a leasehold or freehold interest might be appropriate.
- 10.32** Sustrans has created numerous permissive rights routes that have worked satisfactorily. The interests are largely freehold or leasehold – licences are generally avoided, because of their poor security of tenure. Sustrans can advise on the implementation of permissive agreements.
- 10.33 Providing cycle facilities in parks:** The status of footpaths in certain parks and the ability to convert them to cycle use might be determined by local or private Acts of Parliament. The need to revoke or revise local park by-laws might also be applicable. A number of London's parks are Royal Parks and specific statutory procedures apply.
- 10.34 Creating new off-carriageway routes:** Local authorities can create new cycle tracks under s65(1) Highways Act 1980. New footpaths, bridleways or restricted byways can be created under sections 25 or 26 of the Highways Act 1980, either through agreement or by using compulsory powers. A route might also be dedicated for use as a cycle track if there is a precedent of sustained use by cyclists. Creating a cycle track on a new alignment might require planning approval if it is outside the highway boundary.
- 10.35 Allowing cycling in pedestrianised areas:** If cyclists are to be permitted to use a pedestrianised (i.e. vehicle-restricted) area, they need to be given legal authority to do so. This can be achieved by amending the Order extinguishing the right to use vehicles on a highway under section 249 of the Town and Country Planning Act 1990 or section 1 or 6 of the Road Traffic Regulation Act 1984, whichever is appropriate. Further advice is provided in Traffic Advisory Leaflet 9/93, *Cycling in Pedestrian Areas* (DfT, 1993).

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Shared use routes are designed to accommodate the movement of pedestrians and cyclists. Shared use schemes require careful consideration, and this Local Transport Note (which supersedes LTN 2/86 *Shared Use by Cyclists and Pedestrians*) provides advice on their planning, design and provision. It suggests a scheme development process to help in deciding whether shared use is appropriate for any given situation and stresses the importance of high-quality inclusive design that addresses the needs of all users. It places particular emphasis on involving users, residents and other stakeholders in the design process.

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