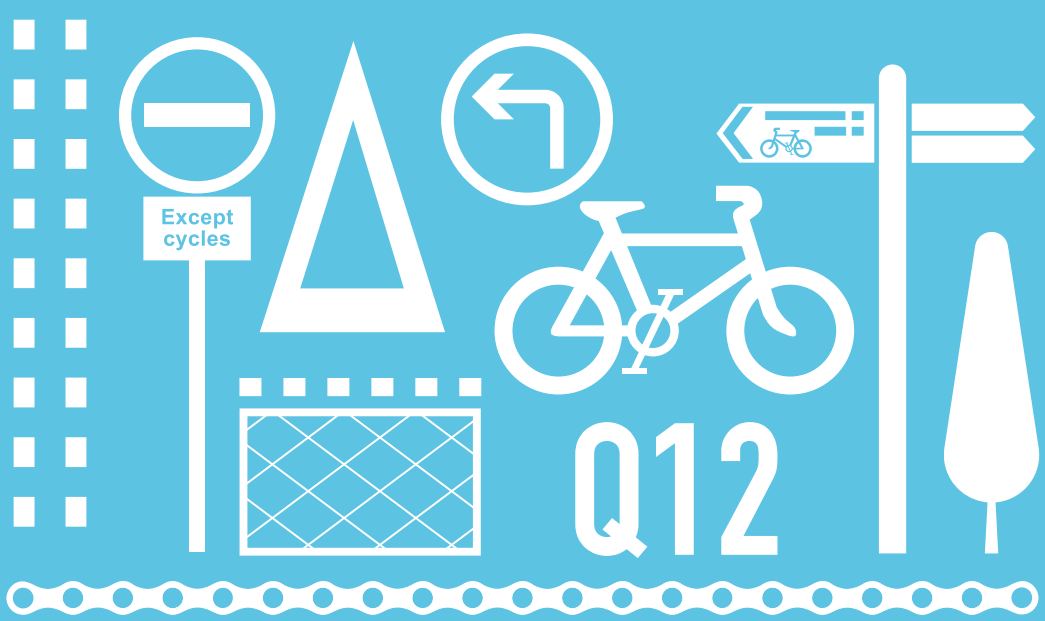


6. Signs and markings

This chapter gives an overview of requirements on signing to support cycling, both for dedicated infrastructure and for cyclists' general use of the highway.

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Version control
 Version 1 (Dec 2014) – Published
 Version 2 (Sept 2016) – Amendments throughout following publication of TSRGD (2016)

6.1 Signing requirements

6.1.1 Signing principles

On the public highway, all signs and road markings must be taken from and comply with conditions for application set out in the Traffic Sign Regulations and General Directions (2002), referred to in this document as TSRGD. Any variations require further authorisation from the Secretary of State for Transport. This usually takes the form of a site-specific authorisation, but DfT may also authorise the limited use of a sign or marking by a single authority on any of its highways. This can be particularly useful for the purposes of conducting on-street trials of non-prescribed signs.

TSRGD revision, 2014-15

The Department for Transport (DfT) is undertaking a full revision of TSRGD and published its Consultation on the draft Traffic Signs Regulations and General Directions 2015 in May 2014. The proposed changes this brings about are referred to throughout LCDS, and many have already been authorised for use on the TfL network. However, others may not be used until the new TSRGD comes into force in mid-2015.

Signing plays an important role in supporting and enforcing safer, more comfortable, legible and coherent cycling infrastructure. Road signs and markings are defined, together, as ‘traffic signs’ within the Road Traffic Regulation Act 1984. References to ‘signing’ in this chapter therefore include both. Signing has three main functions:

- Regulatory – traffic management signing that is enforceable
- Warning and informatory – traffic management signing that warns of hazards and guides vehicle positioning
- Wayfinding – location and direction signing

It is important to understand these multiple roles, particularly where one is regulatory, as the sign must meet regulatory requirements in order to support enforcement activity practised by the highway authority.

Signing contributes to the level of service for cycling, as set out in figure 6.1.

Off-highway, signing is important to indicate where cycling is allowed and recommended, and to support cycle wayfinding. It will need to comply with guidance and standards produced by the managing authority. Recognisable elements from on-highway signing – such as the cycle symbol, route numbers and any branding or colour associated with cycle routes – should be incorporated into such signing wherever possible to support legibility.

Figure 6.1 Key signing considerations in CLoS

Factor	Indicator	Relates in this chapter to
Coherence: Connections	Ability to join/leave route safely and easily	Fit-for-purpose signing, conforming to regulatory requirements
Coherence: Wayfinding	Signing	Wayfinding and direction signing
Attractiveness: Minimise street clutter	Signing and road markings required to support scheme layout	Minimising the need for signing

6.1.2 Applying the principles

Signs and markings should be applied sparingly in order not to add unnecessarily to street clutter. There are many types of information that can be better conveyed through informal cues in the environment than through formal signs. For example, cycle facilities should ideally be physically separate from pedestrian facilities, or at least look different, thereby reducing the need to instruct users about where cycling is and is not permitted.

Without adding unduly to clutter, designers should seek the most appropriate combination of signs and markings to help guide cycle positioning and direction. Sign posts can be unsightly and obstructive and should be kept to a minimum, unless used as a short-term measure to support legibility on a new route. Surface markings are very often preferable, but they can wear quickly and result in higher maintenance costs and they may be unacceptable in certain locations such as Conservation Areas.

Where it is essential to use signs on streets, then lighting columns, existing sign-posts, walls, railings and bollards should be considered as a sign fixing point in the first instance – subject to seeking permission from the owner and to a wind loading assessment as appropriate.

Maintenance of signs and markings is as important as design and implementation of signing. Highway authorities should adopt a maintenance schedule (see section 7.4.2 for further details) to check that signs are present, in good condition and correctly mounted, and that surface markings are relevant, clear and safe. Inappropriately placed cycle signing and signing in a poor state of repair or inadequately illuminated must be rectified, removed or replaced as a priority.

Such inspections should take place at least every two years. It is also important that the state of road markings is inspected following reinstatement after resurfacing or utilities works.

6.1.3 Regulatory changes

Regulations and national guidance are increasingly promoting a more flexible approach to signing, which will allow the principles set out above to be implemented more effectively. The revision of TSRGD, published in 2016, followed a national traffic signs policy review and the publication of the policy paper, *Signing The Way* (2011). Key themes from this review included:

- Providing greater discretion for local authorities to design and deliver traffic signs that meet local needs
- Greater emphasis on the role and responsibility of traffic engineers and sign designers
- Reduction in the need for central approval of non-standard signing
- Improved signs and signals that will promote safer cycling and walking
- Reducing the environmental impact of signs
- Welcoming innovation and trialling



Area-wide authorisations issued in October 2011 made it possible to add an 'Except cycles' plate to a 'no entry' sign to permit contraflow cycling

In advance of the revision of TSRGD, DfT issued a series of area-wide authorisations to all local authorities in England, covering a range of new signing measures. These included the ability to use the 'except cycles' plate with the 'no entry' sign, greater flexibility in signing for 20mph zones, and cycle safety mirrors. These can be used without further approval from DfT. The authorisations can be found on the DfT website and in the Area-wide authorisations and special directions guidance note (2012).

In January 2012, TSRGD was amended to include a range of new signs, including some that are beneficial for cycling (Traffic Signs (Amendment) (No. 2) Regulations and General Directions, 2011).



Flexibility in sign use: small version of the shared-use path sign as part of context-sensitive design

These included signing for contraflow cycling in one-way streets and new cycle route signing (see Traffic Advisory Leaflet 1/12).

The 'Schedule of signs' (section 6.4) summarises most of the signs used for cycling infrastructure in the UK, over and above those that form part of the general traffic signing regime. This references the TSRGD (2016) diagram numbers. Supplementary advice on the correct application of signs and road markings can be found in the Traffic Signs Manual (HMSO/ Stationery Office).

6.1.4 Signs requiring enforcement

Traffic Orders require regulatory signs and markings to give them effect and enable enforcement. These orders are particularly relevant to on-carriageway restrictions, such as cycle exemption from 'no entry' or banned turns. Similar provision can be made in many cases at traffic signals, but different diagram numbers apply. See section 5.4.2 for guidance on procedures for schemes involving traffic signals.

Traffic Orders are not normally needed for off-carriageway cycling other than in the case of one-way operation of cycle tracks (see section 4.1.2).

TSRGD (2016) now prescribes variants of diagram 877 that allow for 'Except buses and cycles' or 'Except cycles' to be added to lanes dedicated to left-turning general traffic but also used by buses and cycles. This and similar signs should only be used where road markings do not provide sufficient clarity.



Cycle exemptions to general traffic restrictions



diagram 606 – proceed left/right



609 – turn left/right



612 – no right turn for vehicular traffic



613 – no left turn for vehicular traffic



616 – no entry for vehicular traffic



816 – no through route for vehicular traffic



Exemption to box sign restriction

Other markings such as yellow 'box junction' markings to diagram 1043 and 1044 can be provided at junctions where cyclists' movements would otherwise be obstructed. This can be particularly useful at a cycle-only crossing of another road where queuing traffic is common. Note that requirements as to the shape and extent of these junctions have been updated in TSRGD (2016).

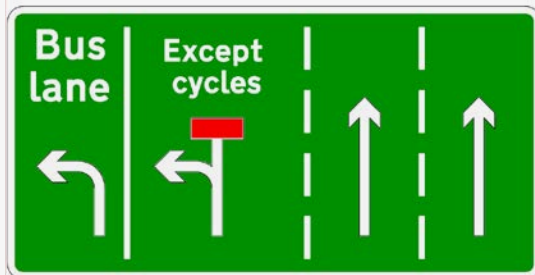


Diagram 877 variant

6.1.5 Signing to support wayfinding

This section sets out general principles for direction signing in support of effective cycle wayfinding, with further information on use of surface markings and signs provided in sections 6.2 and 6.3. It applies primarily to Cycle Superhighways and other branded routes in London. A new signing system is being developed for Quietways, examples of which are shown below. Further details are provided in the separate document, Quietways Signing Guidance (2016).

Direction signing helps cyclists find their way and assess the physical and mental effort needed to complete their journey. Providing direction signing also adds conspicuity to cycling facilities: it advertises the route to existing and potential new cyclists and alerts other road users to the likely presence of cyclists.

Effective wayfinding needs to build on people's own 'mental maps', helping them to find their way by linking together landmarks and to choose routes that are efficient but also safe and comfortable. Many cyclists, existing and new, will do much of this through pre-journey planning and personalised on-route wayfinding provided by tools accessed from smartphones. However customer research shows that there will still be a role for on- and off-road signing that is easy to read at a glance and that can both give information and reassure the user.

Signing to support wayfinding for branded routes should therefore be provided in three main ways:



Indicative Quietways signing

- To give directions ahead of or at a decision-point – through directional signs and finger posts, which may list destinations in one or more direction, or may show the continuation of a route through a 'map-type' element (if following such a route is not intuitive)

- To confirm the route at and after a decision-point – through surface markings and see-through confirmatory signs
- To give reassurance – primarily through surface markings mid-link

Sections 6.2 and 6.3 give more information about recommended signs and markings for wayfinding. Consult programme-specific requirements for further guidance on how to apply this signing.

Direction signing strategy

For each route, a direction signing strategy should be prepared, to ensure that signing is coherent, consistent and easy-to-follow. This should take account of and maintain appropriate continuity with existing signing of cycle routes along and crossing the route. It should have the input of all authorities responsible for managing the highways or other spaces through which the route passes.

The strategy needs to recognise existing cycling provision and networks and links in the vicinity. It is an opportunity to identify and, where appropriate and feasible, enable cycle movements that are currently banned, such as contraflow provision or exceptions to banned turns. It should include a schematic diagram of the route with adjoining routes and destinations for agreement among stakeholders to ensure a joined-up approach.



Direction sign at decision point



See-through confirmatory sign



Marking for reassurance

Preparation of the signing strategy should ideally be part of the route planning and scheme design process. A base plan should be prepared, taking account of:

- Crossing-points with other routes or other unbranded cyclist desire lines, identified from route rides, the highway authority's own information about cycling in its area and input from local cycling stakeholders
- Potential strategic and local destinations
- Existing cycle and vehicle signing – signs recorded photographically
- Locations for proposed direction signing – preferably existing posts or lamp columns

A draft schematic ('spider') diagram should then be prepared, showing the route considered and the destinations proposed. Destinations should be taken from a schedule of primary and secondary locations agreed through programme-specific requirements.

6.2 Surface markings


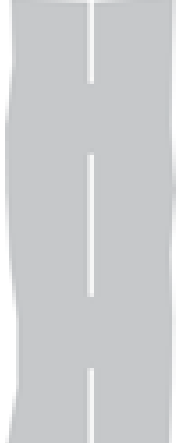



6.2.1 General requirements

Surface markings are used to communicate regulatory traffic management and directional information to cyclists on-carriageway. All markings are classified as traffic signs and are covered by TSRGD. The markings set out below should all be provided in retro-reflective material. These markings should not generally be used off-carriageway (on footways, footpaths or shared use areas).

It is essential to check the condition of surface markings on a regular basis, particularly in areas also used by motor vehicles, and to take swift remedial action when needed. This checking should form part of regular maintenance regimes – see section 7.4.

6.2.2 Lane markings

Although the diagram 1009 marking should have the 1 in 10 taper for mandatory cycle lanes, an angle of 30 or even 45 degrees may be adequate for advisory cycle lanes because it is not so essential to deflect vehicles in advance of it (Traffic Signs Manual, chapter 5, paragraph 16.10). The taper is not necessary where a cycle lane ends before and recommences after a junction, bus stop cage or crossing zig-zag marking.

				
[1049B] Mandatory cycle lane marking (or division of a route between pedal cycles and for pedestrians)	[1004] Advisory cycle lane marking (when used in conjunction with diagram 967)	[1055.3] 'Elephants' footprints' (to define a controlled, cycle-only route across a carriageway)	[1009] Entry taper to cycle lane (recommended 1:10 taper where cycle lane begins)	[1010] Lane through junction (or edge of carriageway marking)
150mm wide or 250mm where lanes are 2m+ wide	100 or 150mm wide 4000mm dash 2000mm gap	Square, with gap equal to length of one side, anywhere in range 250-400mm	150mm wide 600mm dash 300mm gap	150mm wide 1000mm long 1000mm gap

A longer dashed advisory cycle lane marking exists (diagram 1004.1, 6000mm dashes with 3000mm gap) but its use is not recommended because it is for roads of 40mph or more, where an advisory cycle lane is unlikely to be appropriate.

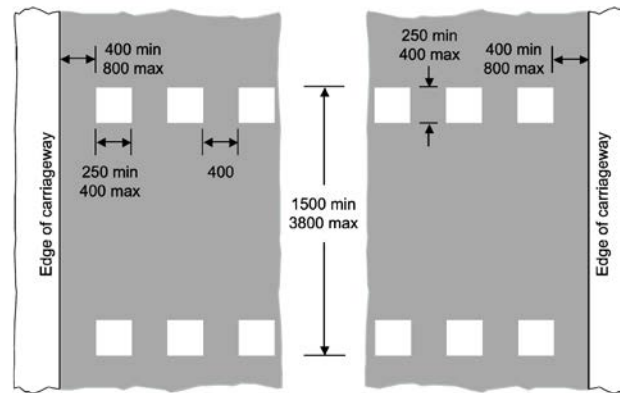
Where a cycle lane is at least 2 metres wide, consideration should be given to using the 250mm-wide version of the diagram 1049B marking, as prescribed in TSRGD (2016).

The use of diagram 1010 markings for the continuation of cycle lanes across junctions is established in TSRGD (2016).

Elephants' footprints

Following the publication of TSRGD (2016), diagram 1055.3 'elephants' footprint' markings can be used to delineate a route dedicated to cycles through a signal-controlled junction. The markings may be between 250mm and 400mm wide.

These markings should also be used for the cycle part of a parallel priority pedestrian and cycle crossing (see section 5.2.6).



TSRGD diagram 1055.3, marking a route for vehicular traffic consisting solely of pedal cyclists either across a signal controlled junction or across a parallel crossing



Elephants' footprints markings at Royal College Street / Crowndale Road junction, Camden





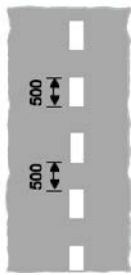
International practice: use of elephants' footprints in Copenhagen

6.2.3 Give way markings

Single-dash give way markings are used for zebra and parallel pedestrian/cycle crossings (TSRGD 2016).

Give way markings should not be used at linear transitions between cycle tracks and cycle lanes. They must also only be used for vehicle-vehicle give way movements – they cannot be used where cyclists should give way to pedestrians.

'Keep Clear' (TSRGD diagram 1026), yellow box, hatching and chevron road markings may also be useful for warning drivers to give priority to cyclists crossing or moving in the same direction. They can help remind drivers to give cyclists enough space to pass safely. 'Keep Clear', often employed for safeguarding access for emergency vehicles, can also be used to help keep cycle gaps unobstructed by parked vehicles (although they are not enforceable).

		
[1003] Give way double-dashes	[1023] Give way triangle	Give way single-dashes
300mm dashes 1500mm gaps 300mm gap	3750x1250mm full-size but 1875x625 recommended for cycle use	200mm wide 500mm dashes 500mm gaps




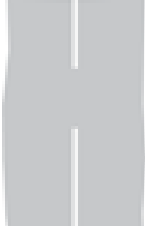


Chevron markings used with islands



Keep clear markings allow space for cyclists to cross




6.2.4 Other markings for cycle tracks

For two-way cycle tracks, centre line markings should consist of 50mm-wide diagram 1008 markings generally, with two sets of the longer diagram 1004 markings used where the track adjoins an intersection or shared use area (where more conflicting movements are likely). Where centre lines are omitted – for example, where flows are expected to be tidal and designers wish to suggest there is more flexibility in use of width – an alternative may be the use of pairs of diagram 1057 cycle symbols in opposing directions.

			
<p>[1008] Centre-line marking for two-way cycle tracks</p>	<p>[1004] Centre-line marking for use at intersections</p>	<p>[1049.1] Raised marking to divide a route between pedal cycles and pedestrians</p>	<p>[1009] Edge of carriageway on cycle track</p>
<p>50mm wide (when used as a centre line) 2000mm dash 4000mm gap</p>	<p>50mm wide (when used as a centre line) 4000mm dash 2000mm gap</p>	<p>150mm wide, with 50mm top face 12-20mm high May need 20mm gaps at 3m intervals for drainage</p>	<p>100mm wide 300mm dashes 150mm gaps</p>

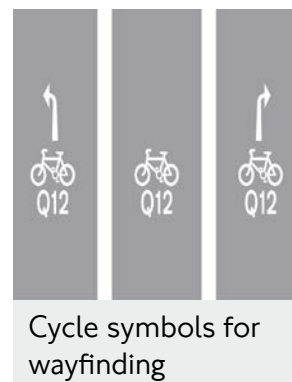
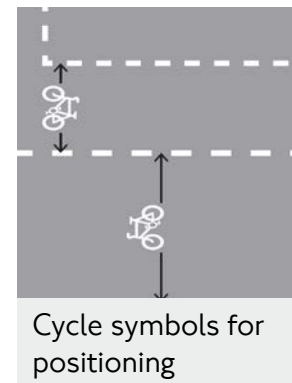
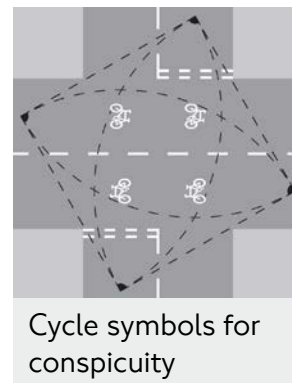
6.2.5 Cycle symbols and direction signing

Diagram 1057 cycle symbol markings should be selected according to the width available: usually medium-sized, but small for cycle tracks and large for ASL boxes. They are used, orientated in the direction of travel for cyclists, in three distinct and well recognised ways:

		
[1057] Cycle symbol marking	[1059] Route direction arrows	[1057.1] Number of a cycle route
750x1215, 1100x1780 or 1700x2750mm	1000 or 2000mm high Smaller size recommended for direction signing	705, 1305 or 1600mm high Select to match use of 1057 and 1059

- For conspicuity: alerting other road users to expect the presence of cyclists
- For positioning: suggesting a recommended line of travel for cyclists
- For wayfinding: indicating a route, particularly at a decision point

Any use of this marking should either meet all three functions, or positioning and conspicuity without an explicit wayfinding function.



The cycle symbol should never be used for wayfinding where it compromises the positioning function, particularly at junctions and past parking and loading bays. Although only some cyclists will take cues on positioning from the cycle symbols, location of the symbols should be such that they reinforce where cyclists will have been trained to position themselves in any given situation.

The diagram 967 sign should only be used with the diagram 1057 road marking where there is an additional need to alert other road users to the presence of a cycle route. This is consistent with advice in Traffic Advisory Leaflet 1/13, Reducing Sign Clutter, on interpreting TSRGD (2002) guidance flexibly.



Diagram 967 sign

For cycle lanes and tracks, cycle symbols should be provided at the start of the facility and then immediately after each decision point thereafter: after a side road has joined the route, and before and after parking bays, loading bays and bus stops.

Cycle symbols can also be used to mark a cycle route where a lane or track is not provided. They should be located before and after side roads, loading/parking bays and bus stops.

Positioning at side roads

Cycle symbols marked at the entry to and exit from side roads joining a cycle route are used to alert motorists and pedestrians of the presence of cyclists. They remove any need for warning signs to diagrams 962.1 or 963.1 except for situations where contra-flow cycling is permitted. At side roads with restricted access or less than 5 metres wide, kerb-to-kerb, one rather than two diagram 1057 markings may be used.

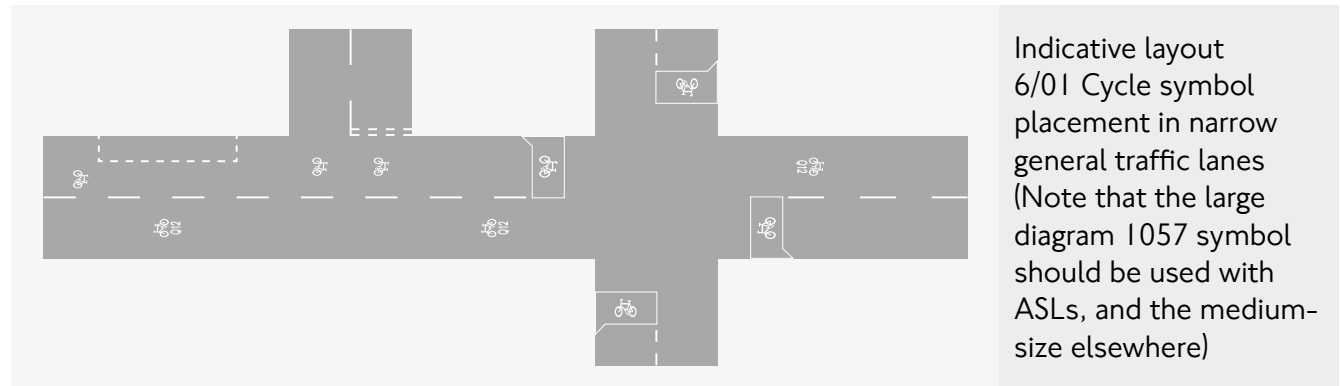


Positioning in narrow, shared lanes

Symbols should never be placed so as to encourage a riding position closer than 0.5 metres from a kerb, side road or obstruction. Where conditions are appropriate for primary position riding, which generally means in general traffic lane widths of less than 4 metres, symbols should be placed in the centre of running lanes.

Symbols in opposing directions

Cycle symbols in opposing directions should usually be placed so that there is at least 10 metres between the edges of the opposing symbols. Exceptions are permitted where additional symbols



are provided to identify decision points and where, on two-way cycle tracks, there is a specific need to mark two cycle symbols together in opposing directions to indicate two-way movement (usually when there is no centre line in the track).

Repeaters

Over and above this minimum provision, the placement of repeater symbols is dependent on the place and movement characteristics of the street and on wayfinding requirements associated with cycle routes. In some cases, it may be beneficial for each symbol to be visible from the previous symbol, for route continuity, but this may not be necessary on local streets where it is intuitive that cyclists should not turn off. Indicatively, the longest gaps should be no more than 250 metres, and a working minimum on links is 20 metres. Where practical, cycle symbols should be placed close to street lights, to maximise visibility after dark. Recommended spacing of cycle symbols is summarised in figure 6.2.



Diagram 1057 symbols showing continuation of cycle route and recommended road position

Figure 6.2 Recommended spacing of diagram 1057 markings for route continuity

Location	Spacing/ layout
Local streets / Quietway	150-200m
Off-carriageway cycle track (surfaced)	100-200m
Cycle lanes on-carriageway (normal)	20-100m
Cycle lanes (high stress)	20-30m
Main road route (no lanes)	20-30m
Cycle feeder lane to ASL	10-30m

Symbols marked through junctions

Cycle symbols may be used as a substitute for lane markings through junctions (see section 4.3). This may be most appropriate where a route is signified by diagram 1057 symbols only before and after the junction, as it provides continuity. Placement of symbols across junctions should ensure that a smooth, continuous alignment for cyclists is maintained. Where bus stops or loading/parking bays mean that cycle symbols are placed well away from the nearside in the vicinity of a junction, that same line for symbol placement should be continued through the junction.



Well-placed cycle symbols through a junction to show a recommended route for ahead cyclists (top). Poorly placed cycle symbol on a bend (bottom)

Signing direction of a route

For signing a change of direction of a route, diagram 1059 markings may be used in conjunction with the diagram 1057 marking. If a branded route is numbered, the number may also be provided using the diagram 1057.1 marking.



Care should be taken in such circumstances not to suggest to cyclists that they must move in the direction indicated. This can be a problem, for example, at a T-junction where a local street joins a main road, where it may be unwise to suggest to road users that cyclists will always be turning in the direction indicated or where the marking may be obscured by queuing vehicles. This technique is therefore best used:

- On streets with low traffic volumes and existing calming measures, where directional surface signing is unlikely to be covered or misinterpreted
- To sign where a route turns off to a minor street or cut-through where it is clear that continuation on the current alignment is equally valid for cyclists (provision of visible cycle infrastructure on that street can help in that regard)
- To sign different cycle movements within a cycle track at a signal-controlled junction (in which case there is no ambiguity because more than one direction is indicated)

Signs rather than road markings can be used to indicate change of direction of a cycle route, but only where misinterpretation of a direction arrow increases collision risk for road users.

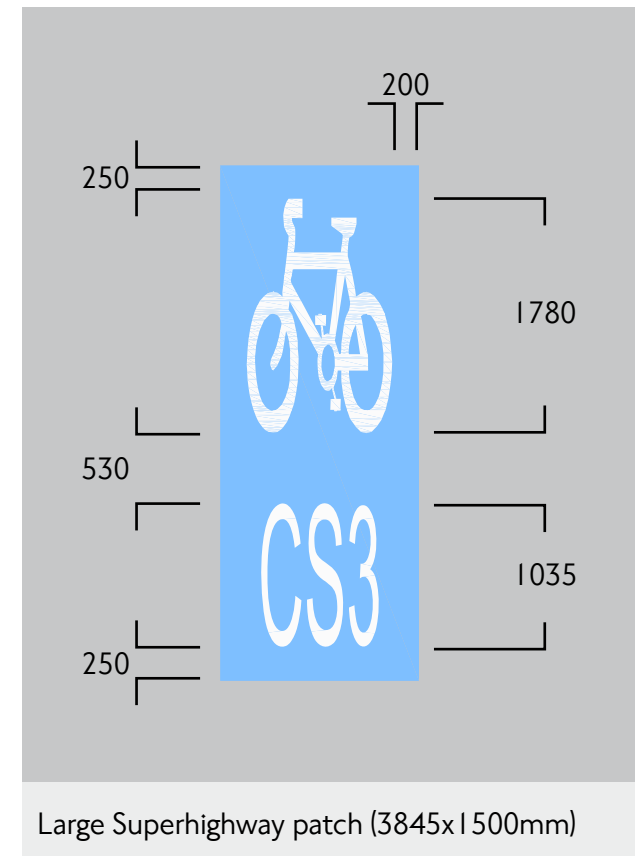
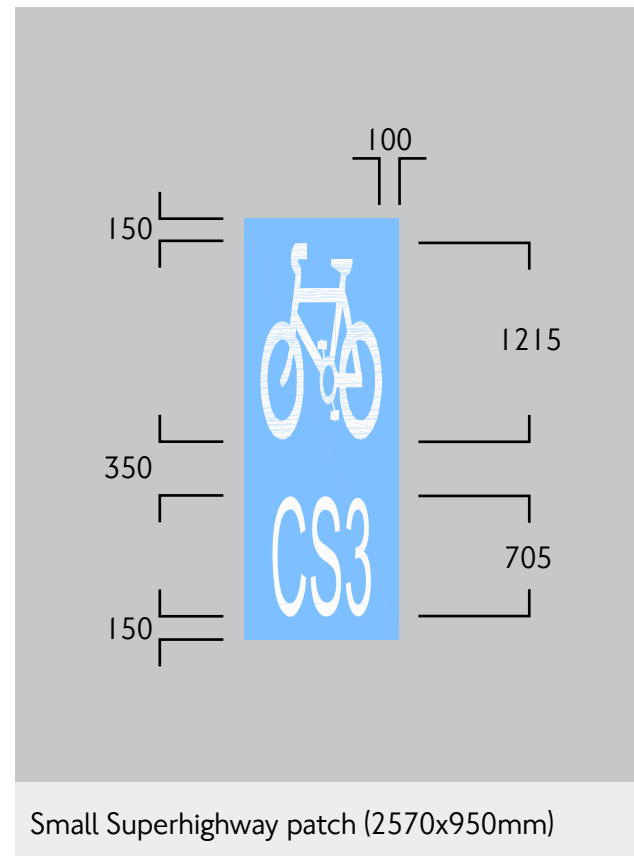
6.2.6 Coloured surfacing

Coloured surfacing has no legal meaning and may be applied to cycle-specific infrastructure. It should only be used in conjunction with regulatory signing (including markings). Use of colour is optional and the benefits should be considered against capital and maintenance costs and impacts on the streetscape.

It is recommended that coloured surfacing should be used selectively to emphasise road markings, such as the cycle symbol. It may therefore highlight for all road users the likely movement of cyclists at locations where motorised vehicles may encroach upon or cross their path. It should be reserved for conspicuity and not used for wayfinding purposes.

Examples of where surface colour may be considered include lanes marked through priority and signal-controlled junctions and alongside on-street parking or loading bays. Risk assessment should inform the approach in every case; surface colour should not be applied generally at all such locations.

On Cycle Superhighways, the cycle symbol on a blue patch may appear with a route number, but this application should still fulfil the conspicuity criteria.



6.3 Signs

6.3.1 Direction signs

Most regulatory cycle direction signs, such as advanced direction signs and finger post signs, can be created using the ‘menu approach’ based on item 8 in TSRGD (2016), schedule 12, part 2.

Advanced direction signs

These are used prior to junctions, route intersections or other decision-points. They give directional information, but may also serve to give warning of the junction and enable initial manoeuvring to take place. Advanced direction signs may be appropriate in advance of a right turn or where the recommended path through the junction for cyclists is not otherwise obvious. The main types are:

- Simple direction sign, where an arrow shows how a cycle route continues
- Stack signs, where different destinations are listed above each other
- Map-type signs, which show a pictorial representation of the junction and can also include destinations and route types

A map type sign, or map-type panel within a sign, can show a precise route through a junction, distinguishing between on- and off-carriageway provision, and showing priorities and crossings.



Map-type signs to TSRGD diagram 2601.2



Stack sign



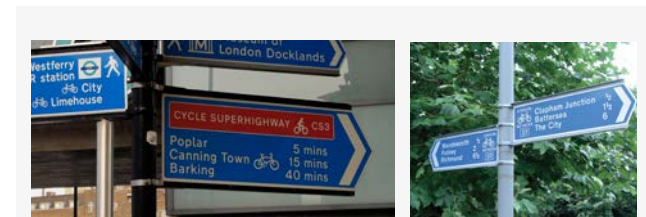
Simple direction sign showing route number



Quietway direction sign (route- or site-specific approval will be required)

Finger posts

Finger posts can provide simple information about directions or incorporate destination names and route types as necessary. They should be placed at the junction or decision-point itself and point in the appropriate direction using a chevron-type arrow.



Examples of finger posts incorporating different route branding

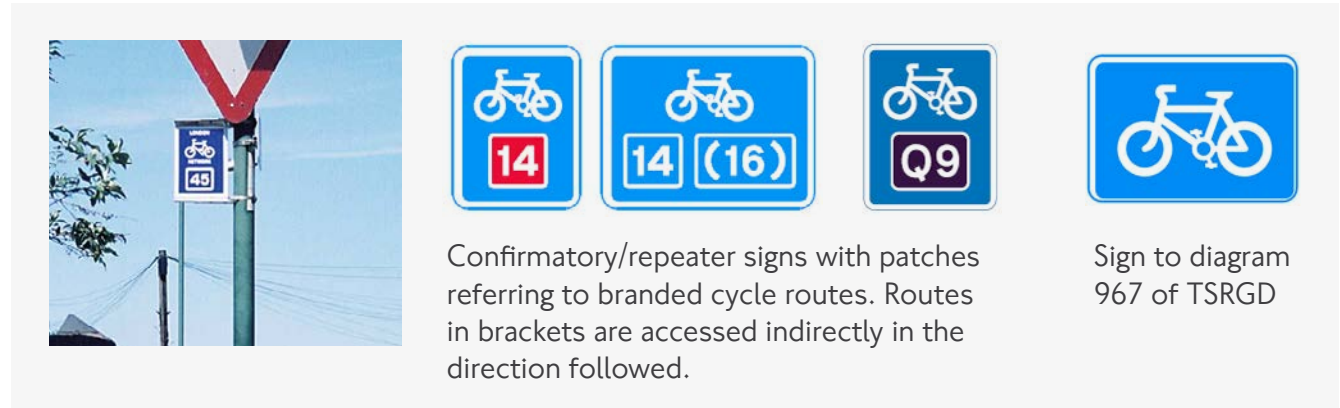
Confirmatory signs

Route confirmation signs have a separate diagram number, 2602.2, in TSRGD (2016). They may be used either as see-through confirmatory signs at junctions, located on the far side of a junction to confirm the continuation of a route for cyclists, or as repeaters on long sections of cycle routes. Both should preferably be used on existing posts or lamp columns, and both may substitute for surface markings when area-specific guidance may preclude use of the markings.

Repeaters should be provided at least after each decision point. Where only one route number is given, sign size is 165mm wide and 230mm high. Note that the cycle route sign to diagram 967 may also serve as a confirmatory sign.

Route and branding information

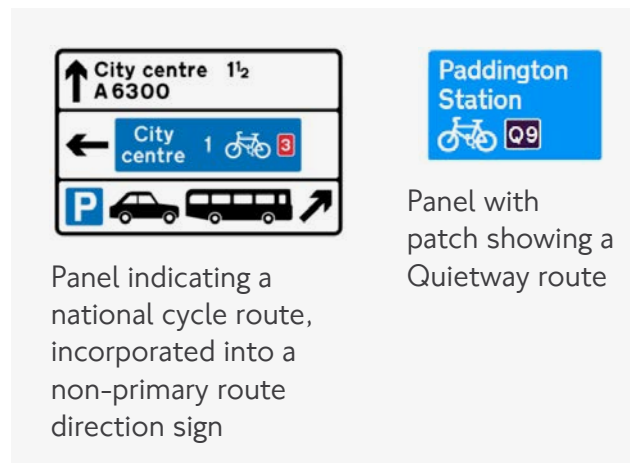
As the above sign types show, route numbers and branding colours can be incorporated into the blue-background signs, if used in conjunction with the cycle symbol. Coloured patches for Quietways are purple and for Superhighways are rubine red. Route symbols may also be included, with DfT authorisation, as is the case with Cycle Superhighway finger post signing.



Confirmatory/repeater signs with patches referring to branded cycle routes. Routes in brackets are accessed indirectly in the direction followed.

Sign to diagram 967 of TSRGD

Signing information for cyclists may also be added to other direction signs as a panel using item 7 in TSRGD (2016) schedule 12, part 9. This gives cycle route information on a blue background as part of a 'conventional' direction sign for all road users and may incorporate coloured patches in the same way as the signs above.



Panel indicating a national cycle route, incorporated into a non-primary route direction sign

Panel with patch showing a Quietway route

Sign design

Detailed sign design requires specialist traffic engineer input, reference to the Traffic Signs Manual and TSRGD and use of appropriate computer software. Overall, the size of signs should be kept as small as possible while clearly conveying the necessary information.

Where destinations are listed, closest destinations should be at the top of the sign, with more distant and strategic destinations below. For Superhighways, time to destination in minutes should be used, followed by 'mins'. Journey times should be rounded up to the nearest five minutes, except where a journey is expected to last less than 20 minutes.

Timings should be calculated using an average on-carriageway cycling speed of 10 miles per hour (16 kilometres per hour, as used in the TfL Journey Planner) and confirmed by riding the route at different times and conditions so that a

realistic and accurate average time is provided. Off-highway – through parks and canal towpaths, for example – a lower speed of 8 miles per hour may be applied if appropriate.

'Via' and other wording can be introduced on signs to clarify a route, e.g. via park, common, towpath, bridleway, subway, bridge, shopping centre. The size of this lettering should be 80 per cent of the normal size, ie 25 x-height if 30 is used on the rest of the sign.

6.3.2 Off-highway direction signs

Signs off-highway should conform with branding and standards operated by the managing authority for the park, green space or canal towpath in question.

Route branding elements may, however, be adapted to existing signing. This may be done with finger posts, showing a Quietway route in one direction on one finger with one or two locations on the route and the time to destinations. Route information may also be applied to other information sign types used in park and towpath environments.



Quietway branding applied to canal towpath sign

6.3.3 Warning signs

The sign to diagram 963.1 of TSRGD, warning pedestrians of a cycle track, may occasionally be necessary, but a carefully positioned diagram 1057 cycle symbol may be a suitable alternative. On cycle tracks, a diagram 955 sign (route for pedal cycles only) can serve a dual purpose by removing the need for a 963.1 sign.

To alert blind or partially sighted pedestrians to the presence of a cycle track, a level difference is recommended or, if this cannot be provided, raised delineator marking to TSRGD diagram 1049.1 (see sections 4.5.9 and 4.6.3 for further details).



diagram 963.1



diagram 955



diagram 950



diagram 1057

Where there is a high risk of conflict between cyclists and motor vehicles and where the conflict cannot be eliminated by design, signs to diagram 950 can be used to raise motorists' awareness of the likely presence of cyclists ahead. To maximise the impact of this sign it should not be used frequently.

Where it is necessary to warn cyclists of a hazard such as a low bridge or other obstruction giving a vertical clearance of less than 2.3 metres, then a warning of the specific hazard, eg 'Cyclists beware – low headroom' should be used together with a height warning sign stating the actual headroom available. Signs not prescribed in TSRGD will require authorisation from the DfT.

6.3.4 Signs for pedestrian zones

Town centre pedestrian priority zones are usually created under Section 249 of the Town and Country Planning Act and should be marked with an appropriate combination of signs to diagram numbers 618.2, 618.3, 619, 620.1 of TSRGD to show what restrictions are in place and when they apply. Diagram 619, 'no motor vehicles', means that cycling is permitted, while diagram 617, 'no vehicles', means that it is not.

Schedule 8 of TSRGD (2016) allows for a clearer distinction between pedestrian zones that do and do not permit cycling. The sign to diagram 618.3C, 'Pedestrian and Cycle Zone', should be used where cycling is allowed.

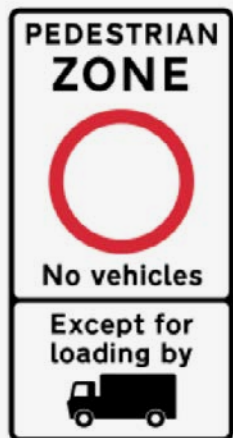


Diagram 618.3B, 'Entry to, and waiting in, a pedestrian zone restricted', with diagram 620.1, 'Exemption for loading/ unloading'. Cycling would not be permitted here.



Diagram 618.3C 'Pedestrian and Cycle Zone' sign



Diagram 620 plate can be used instead of diagram 620.1.

Inlaid symbols

Cycle symbol paving slabs and other inlaid symbols have been used in some areas to clarify that cycling is permitted, although these do not have any legal status on-highway and do not remove the need for vertical signing for shared use areas. Off-highway, they can be a useful way of showing that cycling is permitted.



Non-prescribed uses of the cycle symbol, to show that cycling is permitted

For all cycle routes serving town centres and other pedestrian priority areas, a management and enforcement plan is desirable. This should detail proposals for reducing the obstruction and risk to cyclists and pedestrians from unlawful and inconsiderate driving/riding and car parking.

6.3.5 Signs to minimise or avoid

There are a number of signs that were featured in TSRGD 2002 for use in conjunction with cycle facilities, but are confusing, unnecessary, or in some way compromise wider objectives of promoting safety, comfort, coherence and directness in cycling. This category includes:

- 958.1 (sign) Advanced warning sign for with-flow cycle lane ahead
- 965 (sign) End of lane, route or track
- 966 (sign) Cyclists dismount
- 1058 (marking) END





A cycle route should never disappear abruptly

'End' signing and 'Cyclists Dismount' signs should not be used because they show that consideration for cyclists has simply ended. Where an off-carriageway track ends, signed provision must continue. In most circumstances, this will be on the carriageway – therefore the diagram 966 sign 'Cyclists Rejoin Carriageway' should be used instead of 'Cyclists Dismount', as set out in the 2011 amendments to TSRGD.

6.3.6 Minimising sign clutter

Signs should not create more visual impact than is necessary to convey the right information to those who need to see it. The signs in figure 6.3 below, usually seen as 300mm-diameter signs, can be used at smaller sizes (down to 150mm on unlit bollards for diagram 956 and 957), which may be particularly useful for environmentally sensitive areas as well a general contribution to decluttering. When used as repeater signs, they may be fixed to bollards where practicable, rather than posts.

Figure 6.3 Signs that may be used at a smaller size

	TSRGD diagram no. and name
	[951] 'Riding of pedal cycles prohibited'
	[955] 'Route for use by pedal cycles only'
	[956] 'Route for use by pedal cycles and pedestrians only' (ie shared use)
	[957] 'Route comprising two ways... for use by pedal cycles only and by pedestrians only' (ie with partial separation, by line or raised delineator)



Bollard-mounted signs, to diagram 955 for a cycle route (left) and diagram 956 for shared use (right)

For other signs the smallest practicable plate size should be considered, taking into account the prescribed options in TSRGD. See ‘Schedule of signs’ (section 6.4) for further details.

Although sign size should be minimised wherever possible, it is still essential to ensure they are legible. To minimise plate sizes on direction signs for cyclists, 25mm x-height text (the smallest permitted size, in mm) should normally be

used, as described in TSRGD (2016). It is seldom necessary to use the larger size texts, except where the viewing distance is large (in excess of 30 metres), in which case an x-height of 30mm should suffice in most instances.

The Traffic Advisory Leaflet TAL 1/13, Reducing sign clutter gives guidance on reducing the environmental impact of signs. TfL Streetscape Guidance gives further recommendation on methods of avoiding clutter, based on ‘Better Streets’ principles. See figure 6.4 for a summary of options for minimising clutter.

DfT Circular 01/2016 explains the contribution of TSRGD (2016) to decluttering: “The Department sets the legislation governing what traffic signs look like and mean, but decisions about which traffic signs to place and where to place them is a matter for local authorities. TSRGD 2016 gives authorities more tools than ever before to tackle the scourge of too many signs.”



Cycle Superhighway direction signing attached to an existing sign-post (top) and wall-mounted cycle exemption to a restriction on a narrow street (bottom)

Figure 6.4 Summary of methods for minimising signing clutter

Option	Notes and justification
Combine existing signs and incorporate cycle signs into general direction signing.	See the menu approach to cycle direction signs in Schedule 12 of TSRGD (2016)
For branded routes, consolidate existing signing wherever possible and use existing poles and columns along the route.	Show existing and proposed posts and signs on scheme drawings to allow for review and rationalisation as necessary.
Omit vertical signing in favour of road markings, which avoids the need for sign posts and can be more convenient for cyclists and pedestrians, given their field of view.	This should be a site-specific consideration, bearing in mind visibility in the dark, maintenance, the impact of more surface markings on all two-wheelers and the possibility of markings being covered or obscured by other vehicles.
Use restricted parking zones and 'permit holders only past this point' area-wide parking controls (avoiding the need for road markings to indicate waiting restrictions and parking bays).	The 2011 amendments to TSRGD prescribed the use of 'restricted parking zone' signing. These permit parking only in signed bays, removing the need for yellow lines. Under the area-wide authorisation issued in October 2011, local authorities in England may also remove yellow lines from pedestrian zones where appropriate repeater signs are placed.
For 20mph and 30mph roads, reduce the width of red or yellow line markings to 50mm (for higher speeds retain 100mm markings).	This is recommended by TfL for TLRN in Streetscape Guidance. It helps to minimise visual clutter and incursion of markings into nearside cycling space. Authorities should determine their own approach, bearing in mind the need for consistency.
For streets with a carriageway width of less than 5 metres, omit one regulatory sign (two are normally provided at the street entrance).	TSRGD allows for this – eg one diagram 616 'no entry' sign. Note that, for all signs other than speed limit signs, the centre of the single sign should be within 2 metres of the edge of the carriageway.
For off-highway routes, use smaller sign sizes, as they only need to be visible to cyclists and pedestrians. Also consider reducing frequency of repeater signs.	The 2011 TSRGD amendments specify 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. This is confirmed in TSRGD (2016).

Other sign design requirements

Legibility, attractiveness and visibility in the dark and when wet and in snow, all need to be taken into account when designing signs and road markings. It is difficult for a sign to compensate for poor lighting or for a road layout that is not easily legible. The design of the street, and detailing such as borders, paving or surface colour, can assist cyclists and others by complementing and reinforcing signs and markings and, in some cases (but not where the signs have a regulatory function), superseding the need for them.

Black-backed signs are preferred to grey-backed signs in order to provide sufficient visual contrast for visually impaired people. This is a requirement on TLRN and in Central London (see TfL Streetscape Guide) and is highly recommended elsewhere. Cycle-specific signs should have reflective, anti-graffiti coating. Single- or double-faced signs can be used, as appropriate to the location.

6.3.7 Sign installation and mounting

Signs that indicate the existence of off-carriageway cycling facilities should be sited no more than 10 metres from the start and end of the facility. Ideal spacing for intermediate signs can vary between 20 metres and 200 metres, depending on the frequency of interruptions such as side roads and bus stops.

Signs should be mounted in such a way as to be easily visible to the intended user. However, where their placement might be a hazard for other users – typically when they are on the footway – minimum clearance will be needed. The possibility of parked or moving vehicles or pedestrians obscuring the sign may also have a bearing on the chosen mounting height.

Vertical clearance

In general, any sign likely to be a hazard to pedestrians should be mounted at a minimum height of 2.1 metres to the underside. A minimum of 2.3 metres is required where cyclists can cycle beneath them. For wall or bollard mounting, heights of between 0.8 metres and 1.5 metres are preferred.

Signs may be mounted at lower heights where they do not represent a hazard to pedestrians, cyclists and motor vehicles, such as on grass verges and in parks. Care needs to be taken to avoid interfering with verge-cutting equipment, so a set-back will normally be required on paths off-highway. Away from the footway, the recommended mounting height, measured to the lower edge of a sign, its backing board or any supplementary plate, is between 900mm and 1500mm above carriageway level (Traffic Signs Manual, chapter 3, paragraph 1.21).

Lateral clearance

For signs, poles and signal posts, guidance on recommended dimensions for lateral clearance, based on advice in the Traffic Signs Manual, is as follows:

- Signs should be sited no more than 1.0 metre away from the relevant surface, to avoid confusion
- Where moving motorised vehicles are passing to the side, posts and signs should normally have a minimum of 450mm lateral clearance (or more if the crossfall of the carriageway is greater than 2.5 per cent) – this is in order to prevent damage by vehicles having a lateral overhang, bearing in mind their likely swept paths
- Less than 450mm clearance may be possible on any side where cyclists are the only vehicles passing (minimum 250mm is recommended, although appropriate clearance should be determined by a risk assessment on a site-by-site basis)
- Posts and signs should not encroach into travel envelope of cyclists
- All bollards on cycle routes must have tamper-proof reflective stripes or signs

Anti-rotational fixing

Where there is a risk that signs could be rotated (eg by wind or vandalism), anti-rotational fixings should be used, particularly on finger-post direction signs. Products available include channel clips and clamp-type fittings sometimes with set-screws, rather than banding. Dealing with rotation of finger post signs should be a key part of maintenance regimes.



Signs with fixing channels and mounting clips

Illumination requirements

TSRGD (2016) introduces greater discretion for local authorities to determine appropriate illumination for signs. Unless the sign is internally illuminated, it can generally either be directly illuminated by a sign lighting unit or by ambient lighting from surrounding street lights.

This change has the potential to reduce costs for authorities in providing and maintaining electrical supplies to many signs. However, authorities are advised not to assume that sign lighting units are no longer required for regulatory cycle signs, warning signs and direction signs. Street lighting is likely to provide adequate illumination for many signs, but there are some cases where, on balance, the costs and risks associated with direct sign lighting can be justified.






In each case, a risk assessment should be carried out to determine what type of illumination will allow the sign face to be sufficiently conspicuous in its immediate surroundings. When taking these decisions, risk to the public and to highway operatives should be taken into account.


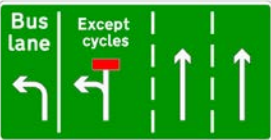






Illuminated sign

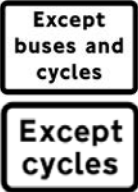


6.4 Schedule of signs




This table is for general reference only and contains requirements current in TSRGD (2016). Please refer to TSRGD and the Traffic Signs Manual for further details of sign application.




	<p>[612] No right turn for vehicular traffic</p> <p>Normally 600mm diameter</p> <p>Can be used with [954.3] ‘except buses and cycles’ or [954.4] ‘except cycles’ plates (or with equivalent signs in a signal head at 300mm diameter)</p>
 	<p>[616] No entry for vehicular traffic</p> <p>Can be used with [954.4] ‘except cycles’ exemption plate</p> <p>Normally 600 or 750mm diameter</p> <p>300mm variant (non-illuminated) can show no-entry for cycles at one-way off-carriageway cycle tracks, but this requires site-specific authorisation</p> <p>Authorisation of use of [954.4] ‘except cyclists’ plate was made through the Traffic Signs (Amendment) (No.2) Regulations and General Directions 2011 (SI 2011 No. 3041) and is established in TSRGD (2016).</p> <p>The diagram 954.3 ‘except buses and cycles’ plate may also be used with ‘no entry’. Variants include ‘except local buses and cycles’ and replacement of ‘and’ with ‘&’.</p>
 	<p>[617] All vehicles are prohibited except non-mechanically propelled vehicles being pushed by pedestrians</p> <p>Normal size 600mm</p> <p>Not be used on cycle routes as it would exclude cycles</p> <p>Play Street exemption plate prohibits all vehicles from the street during the period indicated, except for access</p>

	<p>[619] No motor vehicles (ie cycles permitted)</p> <p>Normal size 600mm (also 450, 750, 900 and 1200mm)</p> <p>Can have exemption plates [620] 'Except for access' and [620.1] 'Except for loading by goods vehicles' attached.</p> <p>For other permitted variants see TSRGD Schedule 3, Part 2, Item 12</p> <p>A [967] cycle route sign can be used with this sign to emphasise cycle only access</p>
	<p>[877 - variation] Appropriate traffic lanes for different movements at a junction ahead</p> <p>Permitted variants include 'Except cycles' or 'Except buses and cycles'</p> <p>Normal size 900mm height (also 1200, 1500 and 1800mm)</p>
	<p>[881] Start of Home Zone / [882] End of designated Home Zone</p> <p>[884] Start of Quiet Lane / [885] End of Quiet Lane</p> <p>Normal size 540mm width (also 675mm)</p> <p>The plate on [881] and [884] contains the name of the Home Zone or Quiet Lane – this may occupy two lines</p>

	<p>[950] Cycle route ahead</p> <p>Can be used with [950.1] exemption plate stating 'Cycles crossing', 'Cycle event', 'Child cycle tests' or 'Child cycle training'</p> <p>Normal size 600mm (also 750, 900, 1200 and 1500mm)</p> <p>Subject to risk assessment, direct illumination is very often not required (see section 6.3.7 above)</p> <p>[572] 'Distance ahead to hazard' plate or [573] 'Distance and direction to hazard' may be used with this sign</p>
	<p>[951] Riding of pedal cycles prohibited</p> <p>Normal size 270, 300mm (450 and 600mm not recommended)</p> <p>Indicates the effect of a statutory prohibition and is placed at the beginning of the restriction</p>
	<p>[953] Route for use by buses and pedal cycles only</p> <p>Normal size 600mm (also 450, 750 and 900mm)</p> <p>Indicates the effect of a statutory prohibition and is placed at the beginning of the restriction. TSRGD provides variants involving other combinations of road users.</p>




	<p>Except buses and cycles plate Except cycles plate</p> <p>An x-height approximately one tenth of the main sign height is normally appropriate from the prescribed options: 37.5, 50, 62.5, 75 and 100mm. 37.5 is recommended for 'Except cycles'</p> <p>The plates indicate the effect of a statutory prohibition – they may be used in combination with [606] or [609], 'vehicular traffic must proceed in the direction indicated by the arrow'</p> <p>May also be used with [612] or [613], 'no right/left turn for vehicular traffic' but when such a turn is into a contra-flow bus lane or bus/cycle only street, protected by a [616] 'no entry' sign, an alternative is to use [953] 'route for use by buses and pedal cycles only' or [960] 'contra-flow bus and cycle lane' to overcome restrictions on plates with 'no entry' signs</p> <p>However, 'except cycles' may be used with [616] 'no entry' and [816] 'no through road for vehicular traffic'</p>
	<p>Exception to a statutory prohibition at traffic signals: [954.5] for cycles [954.6] for buses and cycles [954.7] for buses, taxis and cycles</p> <p>As [954.3 and 954.4] above, but in the form of 300mm diameter circular signs for use as box signs within traffic signal heads</p> <p>The x-height for [954.5] is 37.5, for [954.6] 35 and for [954.7] 30</p> <p>Must be internally illuminated at all times except when the signals they are fixed to are being maintained or repaired</p> <p>May be used in combination with [606], [612] or [613], to indicate an exception to a statutory prohibition</p>
	<p>[955] Route for use by pedal cycle only</p> <p>Sizes: 150mm (recommended for bollards), 270mm (for illuminated bollards), 300mm (for sign posts), 450mm (for illuminated use), and 600mm (not normally necessary)</p> <p>On-carriageway, this sign indicates a Traffic Order defining a route where only cyclists are permitted</p> <p>Off-carriageway, it indicates the effect of a statutory prohibition (erected by a Council Resolution under the Highways Act) and is placed at the beginning of the defined section</p> <p>The 2011 TSRGD amendments changed the minimum requirement for repeater signs to one</p>

	<p>[956] Route for use by pedal cycles and pedestrians only</p>
	<p>[957] Route comprising two ways, separated by the marking shown in diagram 1049B or 1049.I or by physical means, for use by pedal cycles only and by pedestrians only</p>
	<p>[956.1] Route for use by pedal cycles, horses and pedestrians only</p> <p>Normal size 300mm on posts; 100mm and 150mm may be used on bollards and 270mm on illuminated bollards; 450mm may be appropriate for a terminal sign that is otherwise difficult to see, eg against a cluttered background; 600mm is rarely warranted</p> <p>These signs indicate the effect of a Traffic Order and are placed at the beginning of the defined section and along a route</p> <p>The 2011 TSRGD amendments changed the minimum requirement for repeater signs to one</p> <p>For [957] symbols may be reversed in a mirror image to represent the arrangement on the ground</p>

	<p>[958] With-flow bus lane ahead that bicycles, powered two-wheelers and taxis may also use</p> <p>Two sizes: 800x825mm recommended (also 960x990mm)</p> <p>This sign indicates the effect of a statutory order; the word 'taxi' may be omitted and 'local' may be included on the bus if appropriate (as shown below on [959]); permitted vehicles and times of operations may be varied as necessary</p> <p>Use of [958.1] 'With-flow cycle lane ahead' is not recommended, although there may be a case for it in situations where general traffic is moving at 30mph or more and/or where the number of general traffic lanes has been reduced to fit in a cycle lane</p>
	<p>[959B] With-flow bus lane that pedal cycles may also use</p> <p>Two sizes: 450x825mm recommended (540x990mm is not normally recommended unless speed limit is 40mph or greater)</p> <p>This sign indicates the effect of a statutory prohibition and is placed at intervals along the route</p> <p>The word 'taxi' in white letters may be added alongside the cycle symbol, and 'local' may be added to the bus symbol; a solo motorcycle symbol may be included</p>
	<p>[959.1] With-flow cycle lane</p> <p>Two sizes: 375x825mm recommended (and 450x990mm)</p> <p>This sign is for mandatory lanes and is placed at intervals along the route; reverse may be used for offside lanes but requires site specific authorisation</p>

	<p>[960.1] Contra-flow (mandatory) cycle lane</p> <p>Two sizes: 475x825mm recommended (and 570x990mm)</p> <p>This plate indicates the effect of a statutory prohibition, and is placed at intervals along the route</p> <p>The number of arrows showing vehicle lanes may be varied depending on number of lanes, normally one</p>
	<p>[960.2] One-way traffic with contraflow pedal cycles</p> <p>Two sizes: 475x650mm recommended (and 570x780mm)</p> <p>Should be used with an advisory contraflow cycle lane, or no lane marking</p> <p>This sign was authorised by the Traffic Signs (Amendment) (No.2) Regulations and General Directions 2011 (SI 2011 No. 3041), having been included in Signing The Way (2011), and is confirmed in TSRGD (2016).</p>
	<p>Times of operation of a bus or cycle lane plate</p> <p>Two sizes prescribed: 825 and 990mm</p> <p>'x-heights' 50 and 60mm to match the size of sign used</p> <p>Method of illumination for this plate must be the same as the sign which it is placed in combination with, unless the illumination for the sign adequately illuminates the plate</p> <p>This sign is for mandatory lanes and is placed at intervals along the lane, in combination with [958], [958.1] or [959]</p> <p>Time of day and day of the week may be varied</p>

	<p>[962.1] Cycle lane on the road at junction ahead or cycle track crossing the road</p> <p>50mm 'x-height' recommended</p> <p>Unlikely to be necessary and should only be used where specific problems are encountered – [1057] cycle symbols positioned on the cycle lane on main roads are preferred as a method of warning emerging drivers of the likely presence of cyclists</p> <p>Lane may be varied to track, and the cycle symbol and arrow may be reversed for a contra-flow; if a sign is needed, and there are lanes in both directions, the arrow should be omitted and 'lane' varied to 'lanes'; reference to the times of operation of the lane may be added if appropriate</p>
	<p>[963.1] Cycle lane with traffic proceeding from right (sign for pedestrians)</p> <p>Two sizes: 40mm 'x-height' recommended (and 50mm)</p> <p>This sign should not be routinely used; it is sometimes helpful to warn pedestrians when cyclists travel from an unexpected direction eg on a two-way cycle track, but it will often be sufficient to place the cycle marking to diagram 1057 in the lane or track at the point where pedestrians cross</p> <p>'RIGHT' may be varied to 'LEFT' or 'BOTH WAYS', symbols may be reversed, and 'LANE' may be varied to 'TRACK'</p>

	<p>[966] Cyclists Rejoin Carriageway</p> <p>Two sizes: 40mm 'x-height' recommended if used (and 50mm)</p> <p>Sign has no statutory meaning: text replaced 'Cyclists Dismount' as the recommended wording on this sign through the 2011 amendments to TSRGD</p>
	<p>[967] Route recommended for pedal cycles</p> <p>Two sizes: 300x440mm recommended (and 375x550mm)</p> <p>The sign is for advisory cycle lanes and cycle routes on carriageways</p> <p>[959.1] should be used in conjunction with mandatory lanes</p>
	<p>[968/968.1] Cycle parking</p> <p>170x170mm + 250x170mm recommended (250x250mm + 420x250mm not recommended)</p> <p>This sign is usually unnecessary; it may be used in conjunction with signing denoting a combined cycle/motorcycle parking facility</p>

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