

Appendix

Cyclists at roadworks

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

It is important for temporary traffic management designers to examine and assess each and every site individually and not just apply standard layouts. Each option should be carefully considered and risk assessed to ensure that the most appropriate option is taken forward.

It is essential that temporary works are observed, maintained and monitored, with any risks and issues continuously addressed.

The guidance was developed jointly by a group of contributing organisations: AECOM, Amey, EnterpriseMouchel, Ringway Jacobs and Transport for London. It was written primarily for works undertaken on the Transport for London Road Network but it can also be applied to similar urban roads.

Background

Documents such as chapter 8 of the [Traffic Signs Manual](#) and [Safety at Street Works & Road Works, a Code of Practice](#) (the 'Red Book', 2013) refer to the need to consider cyclists when designing temporary traffic management. This appendix provides further detail on those considerations and takes forward ideas outlined in the Traffic Advisory Leaflet [TAL 15/99 Cyclists at Roadworks](#) (1999).

The Mayor's Vision sets out a pro-active approach to improving provision for cyclists through temporary layouts, stating that: 'We will monitor roadworks and building schemes to avoid unnecessary disruption to cycle routes. Following the standard set by Crossrail works at Farringdon, we will try to ensure that even when a road is closed to motor traffic, passage is still provided for bikes.'

Traffic lane widths in the range of 3.2 to 3.9m where there is no dedicated cycle lane. These provide pinch points and a level of uncertainty about whether safe overtaking is possible between cyclists and drivers. (Note that [TAL15/99](#) suggests that lane widths of 3.25m and above are adequate for cars to overtake cyclists, but goes on to demonstrate that around 4m is needed for larger vehicles to overtake safely.)

Issues for consideration

There are a number of potential hazards or impacts that must be considered when designing 'cycle friendly' temporary traffic management. These include:

- pinch points that 'squeeze' cyclists
- removal or obstruction of existing cycle lanes or tracks
- unacceptably long diversion routes
- inappropriate use of temporary 'cyclists dismount' signs: where a clear route has been maintained, cyclists should still be able to use the carriageway
- poor temporary road surfaces, including raised ironworks
- raised cable protectors, hoses or road plates
- road closures (without cyclist exemption)
- one-way working (without cyclist exemption)
- cyclists entering the work site
- measures to avoid conflicts between cyclists and other vulnerable road users

Consideration of these issues should be made from the outset of every project, whether it is a major scheme or minor maintenance.

The issues that should be considered when developing the detailed temporary management proposals are as follows.

Temporary speed limits

Where road widths are limited but sufficient volumes of cycle traffic exists, consideration should be given to lowering the speed limit or a temporary maximum speed recommendation to encourage motorised vehicles to either safely overtake or follow cyclists. This will require a Traffic Order.

A temporary speed limit may also be required or desirable for other reasons such as to reduce risk to site operatives. Changes to speed limits could be either mandatory or advisory, depending on the duration of the works.



Temporary speed limit sign

Lane widths

Temporary lane widths through road works should be designed for cyclists comfort as well as safety. The key initial considerations are whether cyclists are predominantly on or off the carriageway and, if on carriageway, what the volume, speed and composition of motor traffic is. Transitions to and from areas with traffic management layouts are also important and consideration needs to be given to ways of preventing cyclists being 'squeezed' by manoeuvring vehicles at the lead-in taper.

Where cyclists are on-carriageway and the speed limit is 30mph or 20mph, it is usually desirable to keep them on carriageway through the roadworks. In this case, a wide lane (minimum width of 4m) enables drivers of all motor vehicles to overtake cyclists with an acceptable clearance.

If a 4m lane width cannot be achieved then, according to advice given in [TAL 15/99 Cyclists at Roadworks](#) (1999), a 'narrow' lane width of up to 3.25m to 3.50m will enable car drivers to overtake comfortably and will generally deter drivers of larger vehicles from trying to pass at all. If even 3.25m cannot be provided, then a 'narrow' lane width of up to 3.25m and a speed limit of 20mph should be considered with signs stating 'narrow lane(s): do not overtake cyclists'.

Lane widths between 3.50m and 4m should normally be avoided as drivers of large vehicles may attempt to overtake cyclists without adequate clearance.

On higher speed roads (40mph), there will often be off-carriageway provision for cyclists which they should be encouraged to use through signing, though cyclists will usually also be permitted to use the carriageway. In these cases, a minimum lane width of 4.25m should be used through the roadworks to enable comfortable overtaking of cyclists. Where this cannot be achieved, a speed limit of 30mph should be considered in conjunction with a 3.25m to 3.50m or 4m lane width, or a 20mph speed limit and 'narrow' lane as described above. Consideration should be given to the need for extra width at bends and turns in traffic management layouts.

On roads with speed limits of 50mph or more, scheme specific measures appropriate to the existing provision and use by cyclists should be provided.

On prestige cycle routes, including Cycle Superhighways, or routes with high peak time cycle flows (> 10 per cent of vehicles), consideration should be given to arranging the works layout such that temporary cycle lanes can be provided. Where it is not feasible to maintain two-way traffic and where there are significant cycle flows, consideration should be given to providing a cycle contra-flow facility. This will be particularly beneficial where a diversionary route would satisfy one or more of these conditions:

- be in place for a long period
- involve significantly greater effort owing to distance and gradients
- put cyclists at greater risk due to the road layout and traffic conditions

Contraflow cycle facilities should be a minimum of 1.2m wide (recommended 1.5m) and may require some physical segregation from opposing traffic, based on site-specific risk assessment.

It should be noted the minimum lane width recommended in the DfT code of practice, [Safety at Street Works and Road Works](#) (2013), to enable the passage of buses and HGVs is 3m.

Summary of recommended lane widths at roadworks

<3.25m	Consider 20mph speed limit and 'Narrow lane: do not overtake cyclists' sign
3.25 to 3.5m	Too narrow for drivers of large vehicles to overtake but cars can pass cyclists
3.5 to 4.0m	To be avoided
4.0m+	Wide enough for all vehicles to overtake on lower speed roads (20mph)
4.25m+	Wide enough for all vehicles to overtake on higher speed roads

Note that these are different from the recommended widths in LCDS section 4.4, because they take into account effective width for cyclists in scenarios where there is a physical barrier on both sides of the lane.

Traffic signal timings

Temporary traffic signals should give cyclists sufficient opportunity to pass safely through road works (appropriate intergreen times should be used, see also 'Lengths of road works' below), particularly where oncoming motor vehicles cannot pass without conflict. When specifying the most appropriate arrangements, consideration should be given to clearance times for cyclists, particularly on steep hills.

Length of road works

Cyclists are generally more at risk through road works, so limiting the length of the site should be considered. For example, if a scheme is to be constructed over 100m and a cycle facility or wide traffic lanes (4m+) cannot be provided, then it should, where possible, be completed in shorter sections to reduce the exposure of cyclists travelling through pinch points. If the length of the work site cannot be adapted, and there is significant cycle demand, then an alternative off road cycling facility or other measures such as a general traffic diversion should be considered.

Maintaining access

Wherever possible, access should be maintained for cyclists in both directions throughout the period of road works, avoiding more hazardous diversions. Cyclists are unlikely to accept lengthy detours or long delays. In such conditions some cyclists will be tempted to ride contra-flow or use footways. This can be avoided by, for instance, providing a temporary segregated cycle lane, shared path or route away from the carriageway. This kind of provision will be most desirable on dual carriageways.

Temporary route signing

Temporary routes and other facilities for the exclusive use of cyclists (and pedestrians) should be clearly signed well in advance of the road works. The examples shown below are sign face template examples. Other temporary signs such as 'Cyclists use ramp onto footway' may also be useful.

It should be noted that signs marked ** below do not have specific Department for Transport approval. However Regulation 53.(1).(e).(i) of TSRGD (2002) states 'in this regulation 'temporary sign' means a sign placed on or near a road for the purpose of conveying to traffic warnings about, or information on how to avoid, any temporary hazards caused by works being executed on or near a road'. It is for highway authorities to define what constitutes a specific 'hazard' in any given location, but there is a strong case for regarding narrow lanes as such a hazard for cyclists.



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Note that narrow lanes may not be the only reason why there may be a design to instruct drivers not to overtake cyclists. Greater risk at bends and corners may also justify a 'do not overtake' sign.

Road surface

It should be borne in mind that cyclists are particularly vulnerable to uneven, slippery or excessively rough surfaces. Therefore, consideration should be given to phasing of works to avoid temporary surfaces or raised ironwork.

If cyclists are to be signed via a diversion route, then the surfacing on this alternative alignment should be checked and corrected if necessary before the diversion is introduced. Where raised iron work is unavoidable, in addition to warning signs, consideration should be given to marking it in a contrasting colour to improve visibility, in addition to warning signs.

Barriers

It has been identified that cyclists will often pass through a line of cones and enter the works safety zone, and even the works area on occasion. This could be minimised by the use of a solid barrier and closely spaced cones in the taper and the first metre, then normal cone spacing along the remaining length, whilst also providing barriers alongside the linear safety zone. This would provide a clearer obstruction to cyclists, to discourage encroachment into the working and safety zones.

Road Safety Audit

A Road Safety Audit may be required for temporary traffic management schemes. TfL policy is that such schemes will not generally require auditing unless they remain in operation for a period of six months or more. Consideration should be given to auditing temporary traffic management schemes that are to remain in operation for a period of less than six months if a significant impact on the highway network is anticipated.

Temporary traffic management layouts

Some schematic drawings adopting the general principles detailed in section 3 have been developed in order to assist with the design of temporary traffic management to cater for cyclists more adequately.

In developing the most appropriate solution, reference should also be made to the 'Cyclists and temporary traffic management design checklist' below.

The overall risk to cyclists should be considered on a case-by-case basis, taking into account, firstly, the number of cyclists and the effect that the proposed works and resultant temporary traffic management will have on their journey. The assessment should include an estimation of the relative cycle and non-cycle flows. If a significant number of cyclists will be affected by road works, then they should be provided for specifically in the design of temporary traffic management. If an existing facility exists, every effort should be made to maintain it.

There are a number of actual and hypothetical scenarios in the ‘worked examples’ section below, providing further commentary and drawings relating to measures for cyclists at road works.

‘Cyclists dismount’ signs

Simply placing a ‘cyclists dismount’ sign at each of the works is not acceptable and is only to be used where there is no vehicular access of any kind through the works. It should be noted that in cases such as option 2 below, the presence of a shared/segregated footway avoids the need for ‘cyclists dismount’ signs. The use of this sign has not been covered in this guidance because there is invariably a more suitable solution.

Cyclists and temporary traffic management design checklist

Project name:			
Location:			
Road number:		TLRN / SRN / borough?	
AADT (two-way):			
Peak hour cycle flow (two-way):			
Per cent of commercial vehicles			

Existing cycle facilities		Proposed temporary cycle facilities	
Direction 1:		Direction 1:	
Direction 2:		Direction 2:	
Junction 1:		Junction 1:	
Junction 2:		Junction 2:	
Existing speed limit (mph):		Proposed speed limit (mph):	
Existing no. of lanes:		Proposed no. of lanes:	
Existing nearside lane width (m) if no cycle lane:		Proposed nearside lane width (m) if no cycle lane:	

	Y, N or n/a
Existing cycle facilities maintained? If not, see below.	
Lane widths appropriate for cyclists?	
Alternative off-carriageway cycle facility necessary?	
Temporary off carriageway cycle facility signed and TTRO?	
Intergreen timings at temporary signals suitable for cyclists?	

Intergreen timings suitable for cyclists on steep gradients?	
Temporary signal cables in existing ducts or use wireless portable traffic signals?	
Temporary ASL provided if temp signals layout over 30 days?	
Barriers / closely spaced cones to deter cycle encroachment?	
Cycle 'escape areas' provided, where continuous barriers?	
Length and number of pinch points minimised?	
All access maintained for cyclists?	
Off line cycle diversion required?	
Cycle safety, and surface checked on diversion?	
Cyclists at Road Works – Guidance Document 15	
Cyclists dismount signs provided? Only if all alternatives have been rejected?	
Cycling prohibited signs provided, if no suitable alternative?	
If narrow lanes, 'do not overtake cyclists' signs specified?	
Offside merge provided on two lane carriageways?	
Bus stops suspended in works area?	
Is a Road Safety Audit required as per TfL SQA0170?	

Traffic management option 1 – Temporary cycle lane on carriageway

If an existing cycle facility exists either on a wide single lane carriageway or on a dual carriageway, the priority should be to maintain the facility 'on-line' using temporary signs, cones / barriers and road markings as required. The costs and disruption associated with the application (and subsequent removal) of new line markings should be balanced against a temporary facility provided by a line of cones. As such, line marking a temporary cycle facility is unlikely to be practical for layouts in place for less than 30 days. (See Traffic Management Layouts A, B and C)

Traffic management option 2 – Temporary shared path on footway

Should it not be practicable to maintain an 'on-carriageway' facility and where an adjacent footway of at least 3m is available, consideration could be given to temporarily diverting the cyclists on to the footway. There may be some locations where a slightly narrower footway could be considered (2m absolute minimum) if there is no street furniture obstructing the footway and the timing of the works is such that pedestrian and cycle flows are low. The most convenient diversion requiring the least movement away from the cyclists' desire line should be used.

Should the footway be wide enough and have no trips or hazards a temporary dedicated cycle track could be considered, though shared use would be simpler and easier to implement, depending on the site specific details, the pedestrian and cycle flows and whether it is 1 or 2-way. Dropped kerbs for access to and egress from the footway will be necessary or a secure temporary ramp could be provided.

The need for a buffer/safety zone for cyclists on the footway from any adjacent traffic should also be considered for safety reasons. The use of this option will require a Temporary Traffic Management Order or Notice of the temporary cycle facility, appropriate signing and involve consultation / advertising periods (of up to 6 weeks). (See Traffic Management Layout D)

Traffic management option 3 – Temporary speed limit on carriageway

A temporary reduced speed limit is an option if a high volume of cycle traffic exists and if it is desirable to keep cyclists on the carriageway. A lower speed limit allows cyclists to be followed or overtaken by cars at reduced clearances, useful in situations where lane widths are limited. The temporary speed limit could be either advisory or mandatory.

Where works are due to be completed within 60 days it is suggested that an advisory lower speed limit is signed (see sign face template examples above). Where works are due to last longer than 60 days, a mandatory lower speed limit should be considered.

Where narrow lanes are provided, such that it is not wide enough for motor vehicles to safely overtake cyclists, an advisory speed limit of 20mph should be considered through the road works. (See Traffic Management Layouts E and F)

Traffic management option 4 – Reduced available lane widths

Where no on-line or reasonable off-line facility can be provided, reducing the available lane widths to discourage overtaking movements should be considered. (See Traffic Management layouts G and H) This would also have an effect of reducing vehicle speeds. Practically, a restriction of this nature would not be enforceable but can be signed using a temporary sign warning of the hazard caused by works being carried out on or near the road.

Recent observations of a temporary one way traffic management layout suggest that the reduction of a lane to 3.0m will strongly deter large vehicles from attempting to overtake cyclists. Alternatively consider making the works and working area narrower to enable provision of a cycle lane within the remaining carriageway width.

Traffic Management Layout 5 – Motorist diversion

Practitioners should be aware that cyclists should not be unreasonably disadvantaged compared to motor traffic and may not use a long or poor quality diversion. A risk assessment should be undertaken to establish whether motorised traffic should be diverted whilst allowing cycle traffic to continue adjacent to the works area. (See Traffic Management layout I)

Depending on the length of the closure you may need to consider a no through road option for service vehicles with a gateway / point closure beyond which only cycles may pass in accordance with 'no entry except cycles' signage (authorised by DfT in November 2011). Note the use of 'road ahead closed except cycles' signage is currently being discussed with DfT in terms of authorisation.

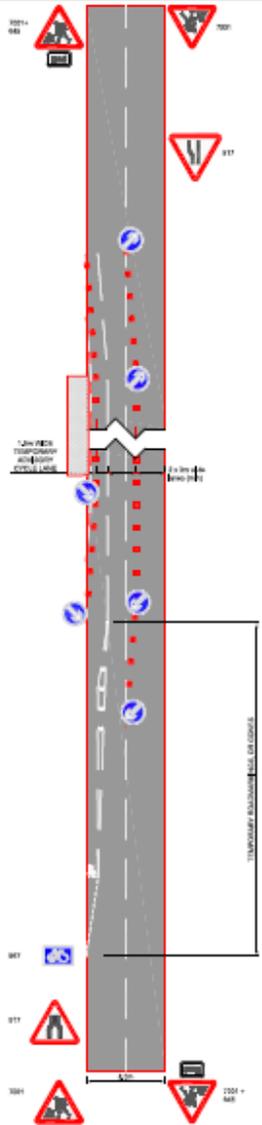
Traffic management option 6 – Off-line cyclist diversion

Should it not be practicable to maintain acceptable provision for cycling through the road works, the most convenient off-line diversion should be sought. This option could be appropriate where a full road closure is intended and a shorter/alternative diversion for cyclists than for motorists is possible (see Worked Example 2).

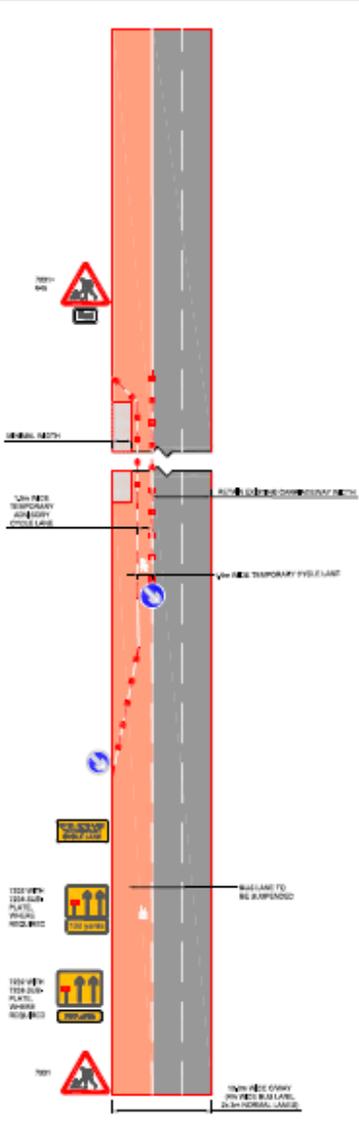
This option may also be useful where the road works are closing an off carriageway cycle facility and it is not appropriate to simply direct cyclists adjacent to the works via the carriageway.

Where a diversion is proposed, provision and maintenance of appropriate signing is vital (see example signs above). Assessment should be undertaken of the diversion route to ensure that it is suitable for cyclists, including: surface condition, suspension of prohibitions, right turn movements designed out / or cyclists routed via signals so right turn movements can take place under signal control. (See Traffic Management Layout J)

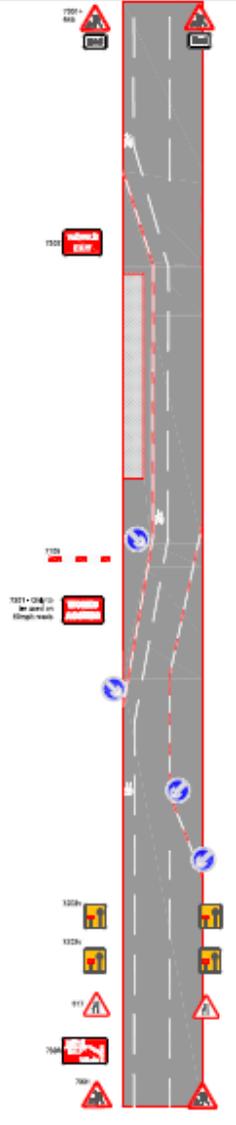
When designing the cycle diversion care should be taken to avoid the potential issue of motorists following the cycle diversion signs. This can sometimes be the case with black on yellow signage, therefore the need to make the cycle route as clear as possible to both general traffic and cyclists is paramount. This could be achieved by using versions of the signs with special symbols ie. black on yellow with text such as 'Cyclists follow [diamond symbol]' or similar.



TM LAYOUT A
 TEMPORARY ADVISORY CYCLE LANE,
 SINGLE C/WAY

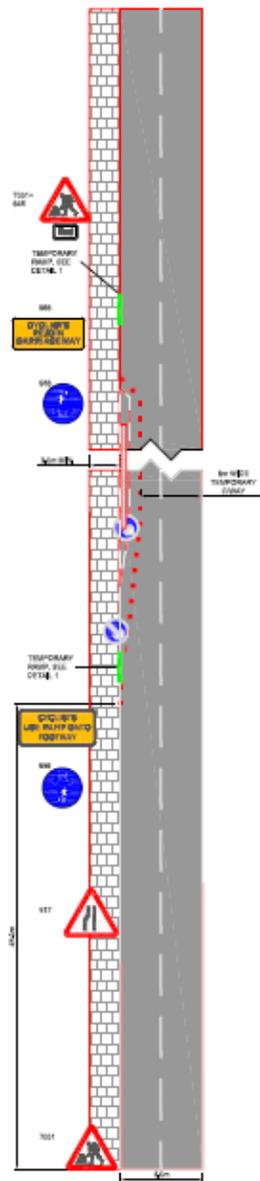


TM LAYOUT B
 TEMPORARY ADVISORY CYCLE LANE,
 DUAL C/WAY WITH BUS LANE

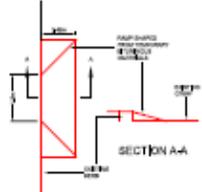


TM LAYOUT C
 TEMPORARY ADVISORY CYCLE LANE,
 DUAL C/WAY

REV	REVISION	PURPOSE OF REVISION	DATE	CHKD	ISSUED
<p>Client: TRANSPORT FOR LONDON</p> <p>Project: CYCLISTS AT ROADWORKS GUIDANCE</p> <p>Product ID: TRAFFIC MANAGEMENT OPTION 1 TEMPORARY CYCLE LANE ON CARRIAGEWAY</p> <p>Drawing Title: ISSUE FOR REVIEW</p> <p>Scale: 1:100 DOWNSIDE SCALE</p> <p>Drawing Number: 80144835IC/RG/OPT1</p>					



DETAIL 1
 PLAN SHAPED FROM TEMPORARY SIGN (SEE INTERNALS)
 SCALE 1:50



TM LAYOUT D
 TEMPORARY SHARED USE FOOTWAY,
 DUAL C/WAY

REV	BY/CHKD	PURPOSE OF REVISION	DATE	ISSUED

TRANSPORT FOR LONDON

CYCLISTS AT ROADWORKS GUIDANCE

TRAFFIC MANAGEMENT OPTION 2
 TEMPORARY CYCLE PATH
 ON FOOTWAY

ISSUED FOR REVIEW
 DATE: 12/20

80144885/CARG/OPT2

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