B.08 Access and Speed Controls

Key Principle

There should be a presumption against the use of any access barriers on a cycle track/shared-use path until/unless there is a ***proven*** need because of the difficulties they can cause all users. Where it is necessary to reduce the speed of cyclists, 2 rows of staggered bollards are preferred (see also A14 Corner Radii, B04 Junction and Forward Visibility, B05 Footway Crossings and B07 Cycle Track Junctions).

Design Guidance

Introduction

Off-road cycle routes generally serve the needs of pedestrians, cyclists, and other non-motorised users. (The latter term excludes cycles which comply with the 1983 Electrically Assisted Pedal Cycles regulations, and motorised wheelchairs and mobility scooters.)

The absence of motor vehicles is a key factor in ensuring that these routes are attractive for their intended users. However, they are sometimes subject to unauthorised use by motorcyclists and car drivers. Where this is a problem, access controls can be installed at the point of entry.

There may also be certain points along the route where the potential for conflict between cyclists and other users is significant, such as at a blind corner on the approach to a subway. This problem can be addressed by putting in controls which limit the speed and/or direction of cyclists.

However, **any proposal to install access controls or speed controls needs to be carefully considered, and based on a proven rather than perceived need**, as any type of control measure can be very inconvenient for those whom the route is meant to serve. In some cases, they can prevent access altogether by certain legitimate users. Designers should be clear as to why they feel there is a need to use such controls. They should only be introduced if the difficulties they are meant to address can not be resolved by other means.

Where controls prove necessary, the arrangements should not force cyclists to dismount, prevent laden bicycles from passing through, or exclude tandems and child trailers etc.

Access controls

The delay and inconvenience caused by access controls means they are often the biggest source of complaints about off-road cycle schemes in the UK (they are rarely used in Continental Europe.)

A fundamental problem with access control is that whatever arrangement is used, it will represent a compromise between keeping motor vehicles out and allowing legitimate users in. The more effective it is in achieving the former, the harder it is to satisfy the latter.

It is relatively easy to design an arrangement that prevents car access while allowing virtually all types of cycle through - a single bollard is often all that is necessary. Motorcycles are much more difficult to control. Measures that reliably exclude motorcycles invariably exclude many types of cycle and wheelchair. For this reason, no attempt to control motorcycle use by physical means should be made until a proven need has been established. If concern about potential misuse by motorcyclists is highlighted during the consultation stage of a new project, capital funds should be set aside to cover it if it eventually proves to be a problem.

Single bollard to prevent unauthorised car access

Picture: Alex Sully

Bollards are preferable to barriers

Picture: Tony Russell CTC

Concerns about misuse by motorcyclists sometimes prove to be groundless. Where problems do arise, they can often be overcome by using simple techniques such as improved information and enforcement, maximising use by cyclists and pedestrians, and using a sealed surface rather than one which is unbound. Measures to control motorcycles are only as good as the weakest point in the route boundary - if fencing can be breached, access barriers will have little or no effect.

On many cycle tracks it will be necessary to permit vehicular access for maintenance purposes. Removable bollards can usually meet this need. If a gate is installed, it can also be used to determine whether there is a need to physically control motorcycle access. If the gate is locked in a partially open position so that motorcyclists could gain access if they wish, the scheme can be monitored to see if this problems arises and establish whether motorcycle barriers are needed or not.

Access control design should also take into account the need to permit emergency vehicle access on longer off–road routes. Measures should, therefore, be developed in conjunction with the emergency services. These may include bollards that can be snapped off by fire engines or ambulances, or gates with padlocks that can be opened using common keys or cropped with bolt cutters.

If the access control prevents wheelchair users from getting through, alternative arrangements will be required to accommodate these users in order to comply with the Disability Discrimination Act. A common method for allowing wheelchair users to by-pass access controls is to install a gate equipped with a RADAR (Royal Association for Disability and Rehabilitation) lock. These locks can all be opened with a single key purchased from RADAR. The system is not foolproof as motorcyclists can obtain the keys but it should discourage most people from using these routes improperly.

The preferred option for access control is a **row of bollards**. These should be a minimum of 1.2m apart, preferably 1.5m. For an additional deterrent effect, they can be installed as two staggered rows with a minimum of 1.2m clearance between each bollard.

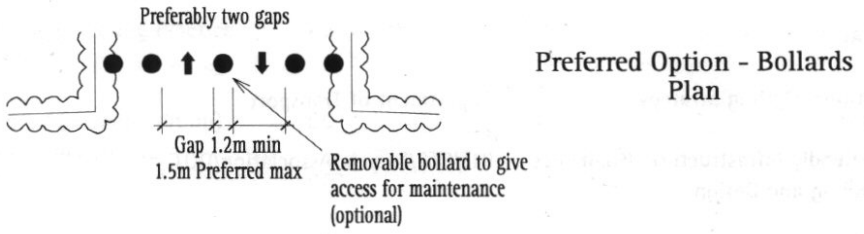
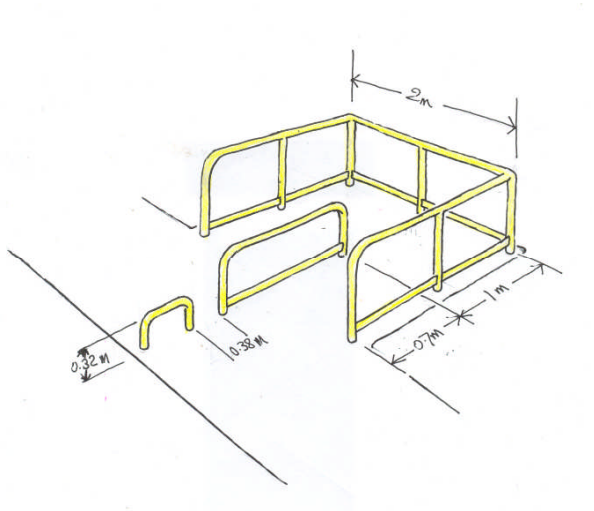


Figure 1/27 (Source: Sustrans)

The same degree of access control can be achieved by using a **barrier with a wheelchair bypass**. This type of barrier can be negotiated by a conventional bike without the cyclist having to dismount but whilst it will deter most motorcycles, it can still be negotiated by a trials bike. If this proves to be a problem, the lower section of the hooped bar (see below) can be raised to make it harder to get this type of motorcycle through. However, such an arrangement cannot be negotiated by cyclists without dismounting. The design as shown below cannot be easily used by cyclists with low rider panniers or trailers, and is therefore unsuitable for long distance recreational routes.



Access control with Wheelchair bypass

Fallowfield Loop Line, Manchester

Picture: Steve Essex

A-frame barriers permit ordinary cycles, tandems and most wheelchairs to pass but they need to be carefully installed to ensure they operate as intended. They exclude larger powered wheel chairs and many types of bicycle trailer.

A-Frame barrier, Black Bear Park, Warrington

Picture: Steve Essex

In some rural locations an **unlocked gate** may be appropriate. The need to open and close gates will slow cyclists and can be tedious if there are several along a route. Solitary cyclists will have to stop to open each one, although groups of cyclists may find them easier to manage than other barrier types. Narrow gates allow access for horses but they also permit entry by motorcycles. However, they can make the path less attractive to such unauthorised users. All gates should be self-closing and self-latching to be effective.

Sett Valley Trail, New Mills

Picture: Steve Essex

Access controls should be set back from the carriageway far enough to accommodate a family group waiting for others to clear the controls. Typically, at least three bikes need to be accommodated and a clear space of at least 2m deep by 3m wide should be sufficient to achieve this. A larger area may be required where a group of users can expect to meet another group travelling in the opposite direction.

Speed Control

At potential conflict points along a route, or where there are gradients which encourage cyclists to travel too quickly, it may be appropriate to install some form of speed control. However, before any decision is made to do so, designers should satisfy themselves that controls are the best way of dealing with any particular problem area. It may, for example, be possible to dispense with the need for speed control by, for example, improving sight lines. The designer also needs to establish whether speed control is necessary in the first place - if it is obvious to cyclists that they have to slow down for their own safety, they are likely to do so anyway. It may be best to simply monitor behaviour on a newly opened route to establish whether it is a problem or not.

Speed control can, however, be particularly appropriate at blind right-angled corners. These can be a problem in subways; especially those originally designed for pedestrian use and subsequently opened up to cyclists. At such corners, it is preferable for cyclists to be guided away from the inside of it.

It may be possible to avoid installing speed controls in this situation by using a longitudinal barrier (or possibly a level difference) to segregate pedestrians and cyclists throughout the length of the facility, with cyclists positioned on the side away from the corner. The effectiveness of segregation will depend on users clearly understanding which side they should use and on their using it responsibly, i.e. not get trapped on the wrong side of a barrier.

Where speed control is necessary, barriers can be used to form a chicane, and to guide cyclists away from the inside of the corner

Longstomps Subway, Chelmsford.

Picture: Steve Essex

The more effective a barrier is in slowing cyclists down, the less it can accommodate larger cycles. A tight chicane may mean that tandems, recumbents, and cycles pulling trailers are excluded. Speed controls also affect the capacity of the route and at peak times they may lead to queues forming, particularly where there are opposing flows.

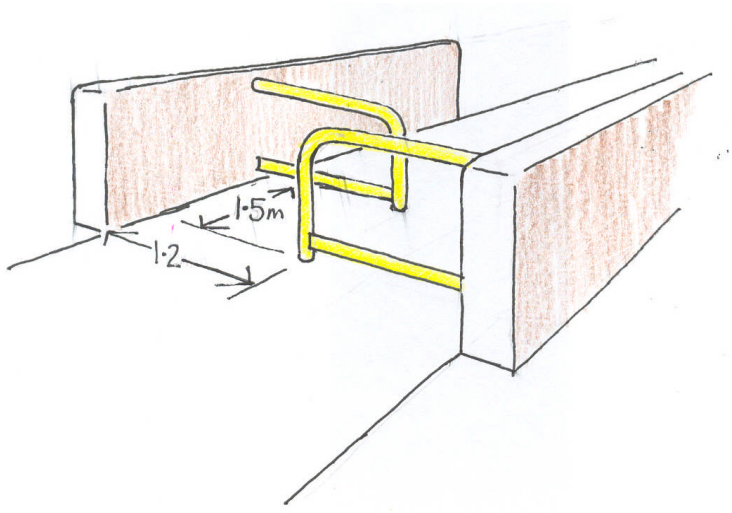
Not all cyclists exhibit the same degree of confidence or skill, and a control arrangement that can easily be managed by some cyclists may force others to dismount. Dismounting to manoeuvre a cycle with an occupied child seat through barriers can be hazardous so arrangements which make this necessary should be avoided.

Location of Barriers

The correct location of barriers is an important element of good design. Negotiating barriers requires attention on the part of the cyclists. They should not, therefore, be positioned where the cyclist should be concentrating on something else. This means that they should not be placed too close to roads that cyclists are leaving or joining, nor should they be used at pedestrian crossing points where cyclists should be seeking to avoid pedestrians. It is also common for mid-path barriers on disused railway or canal paths to be located under bridges. People who loiter on paths usually congregate at barriers and this can be intimidating for some people.

All barriers and access controls need to be visible. While it should be expected that cyclists will have lights at night, pedestrians are unlikely to do so. Partially sighted people could well have difficulties during the day. The barriers should have a colour as well as tonal contrast with their surroundings. Yellow and black gives the greatest contrast. Retro reflective bands will also aid visibility.

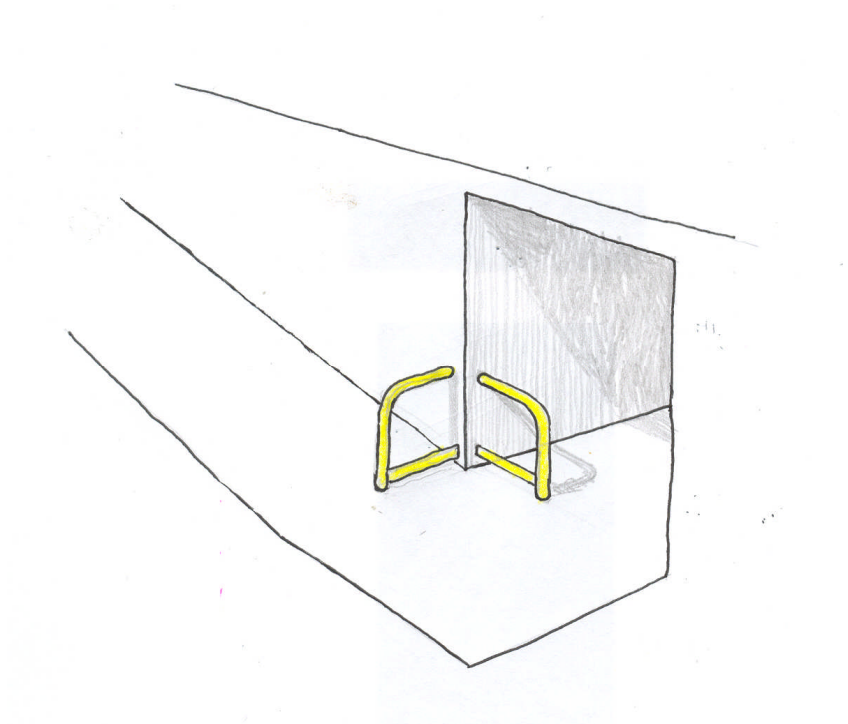
The dimensions of a chicane arrangement are critical to its success. Chicane arrangements can be designed using the information in Chapter 10 (Standard Dimensions). The figure 3/27 below shows the minimum acceptable dimensions.



Minimum dimensions for chicane barrier

Odeon Subway
Chelmsford

Picture: Steve Essex

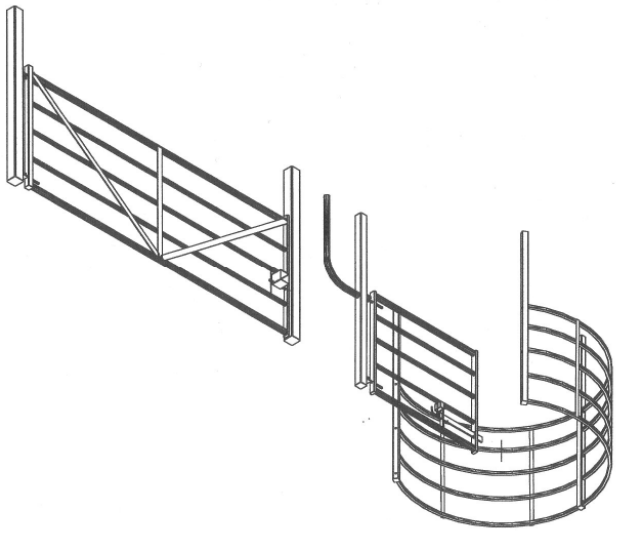


Use of half-barriers at blind corners
(As an alternative a single half-barrier may be used)

Half barriers reduce conflict on the approach to a blind corner

Picture: Alex Sully

Conventional kissing gates can be altered to accommodate cycles and wheelchairs. As with barriers, gates that cannot accommodate bikes with child seats or cannot be negotiated by cyclists without dismounting are not recommended.



Kissing gate combined with RADAR key access via gate and cycle access (Owen Wilson)

References

LTN 2/08 *Cycle Infrastructure Design* DfT 2008

Cycling England Gallery pictorial examples

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Cycle Friendly Infrastructure - Guidelines for Planning and Design Bicycle Association et al 1996