

# Enterprise and Learning Committee

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## Cycle Infrastructure Design (DfT, November 2008) - Quotes and CTC Comments:

### What's Welcome:

**Hierarchy of provision:** CID restates the 'Hierarchy of Provision' for cycling (Table 1.2 & text, p10). This prioritises measures to reduce the volume and speed of traffic, i.e. tackling the major deterrents to cycling at source. At the bottom of the Hierarchy (i.e. the measures that should be considered last) are - in this order - cycle tracks away from roads and the conversion of footways/footpaths to shared use. Importantly, CID emphasises this approach in its section on the design of 'Off-road cycle routes' (8.1.2, p41) as anywhere else.

**Hierarchy of users:** the restatement of the hierarchy of users (pedestrians at the top, followed by cyclists and public transport - with private car users at the bottom) (1.3.4, p10)

**The road network as the most basic cycling facility:** CID supports the view that conditions over the whole of the road network matter to cyclists (1.3.2, p10)

CID says:

'The road network is the most basic (and important) cycling facility available, and the preferred way of providing for cyclists is to create conditions on the carriageway where cyclists are content to use it, particularly in urban areas' (1.3.2, p10)

'Creating space for cyclists by taking existing footway space from pedestrians is generally the least acceptable course of action' (1.3.3, p10)

'In general, off-road cycle routes in urban areas tend to be the least desired option, and it is usually better to cater for urban cyclists on-road if this is practicable.' (8.1.2, p41)

### Off-road provision:

**On or off-road?** Alongside quoting the 'Hierarchy of Provision', CID's advises explicitly on how practitioners should decide on whether to provide on or off-road facilities. It explains the need to consider factors such as motor traffic and pedestrian volume, speed, side junctions, on-street parking and HGV traffic etc. For instance, busy pedestrian traffic along a route would argue against footway and for on-road provision (Table 1.1. p9). The guidance also provides a table linking traffic flow ranges to the most appropriate types of cycle facility to provide (Table 1.3, p13)

**Consultation:** later, CID says 'it is important to consult with cyclists and pedestrian groups' when designing off-road facilities (8.1.2, p41)

**Side roads and cycle tracks:** the problems and risks - particularly to young children - of frequently having to cross side roads whilst using an off-road cycle track is stressed in a later section (10.3, 'Cycle track crossing near junctions', p64 - 66). Here, CID advises on a good range of treatments including; giving priority to the cycle track over the carriageway; installing flat-topped road humps; 'bent-out' crossings; or taking cyclists back onto the carriageway until they are past the junction (CTC's preferred option where traffic volume and speed allow because it avoids loss of priority altogether, 10.4 p65) etc. It also quotes research that suggests that if satisfactory crossings of minor roads can't be provided, a cycle track may not be a 'sensible' creation after all (10.3.4, p65)

**Design speed:** CID recognises that 'Cyclists tend not to favour cycle routes that frequently require them to adjust their speed or stop' and that 'routes with design speeds significantly below 20 mph are unlikely to be attractive to regular commuter cyclists and it may be necessary to ensure that there is an alternative on-carriageway route for this user category'. (8.2, p41).

**Width:** on width requirements for off-road facilities, CID says 'Wherever it is possible, widths larger than the minimum should be used... Practitioners should not regard minimum widths as design targets' (8.5.1, p42).

**Surfaces:** CID says: '...minor surface defects and debris that would be of little consequence for motorised traffic can be uncomfortable to cyclists and may present a hazard.' (8.8.2, p44)

**Obstacles:** CID explains the imperative to remove obstacles such as sign poles, lighting columns, pillar boxes, kiosks etc from converted footpaths and footways (this sounds like commonsense, but it's often ignored) (8.11.1, p47)

**Cycle and car lamps:** CID asks designers to be aware of the dazzling hazards that cyclists encounter at night when using two-way cycle tracks alongside unlit carriageways; and drivers' confusion when they see cycle lights approaching on their nearside - both of which can and have had serious consequences. CID, though, perhaps doesn't go far enough with recommended solutions - we'd ask engineers to consider crash barriers at the most risky points (8.12.2, p47)

**High quality:** CID says 'Pedestrians and cyclists will use high-quality, well-maintained, traffic-free routes away from the carriageway if they are more direct than the equivalent on-road alternative and there are no personal security issues'. Opening up paths through parks, green spaces and along towpaths etc. to cyclists, often provide such opportunities, we believe. (1.3.9, p12)

**Risk assessments and assumptions:** on risk assessments and the decisions based on them, CID emphasises the importance of understanding 'the relative risks of various options'. Essentially, it's guarding practitioners against assuming that such decisions are 'straightforward'. It's common for authorities, for example, to install cycle tracks alongside a carriageway on the assumption that they simply must be safer than the on-road option. To illustrate the risks of this simplistic approach, CID says: 'A cycle track frequently interrupted by side roads can have a significantly worse potential for accidents than the equivalent on-carriageway facility'. (1.6.2 'Risk and Liability, p14)

**Cycle networks and accessibility:** CID recommends that 'cycling networks should link trip origins and key destinations, including public transport access points' ('Accessibility', p11)

**Perception of safety:** CID recognises that infrastructure should not only be safe, but also 'be perceived to be safe'. Cycling is a lot safer than some people think it is - a message that's reinforced where genuinely 'safe' infrastructure looks and feels 'safe' as well. ('Safety', p11)

#### **Vehicle restricted areas (VRAs):**

CID recognises that 'in vehicle restricted areas where the whole street width is available, cyclists can usually mix safely with pedestrians, especially outside the main retail trading hours'. (1.3.13, p12)

The later VRA section itself again stresses the desirability of allowing good cycle access (4.3.4, p23)

In situations where a council is proposing to allow cycling in VRAs but meets with opposition, CID suggests that experimental traffic regulation orders (TROs) should be introduced to see what happens. As trials rarely (if ever) confirm the worst fears of objectors, this is an advantageous tactical approach (4.3.7, p24)

CID warns that marked cycle routes within pedestrianised areas may lead to higher cycle speeds and a greater potential for conflict (4.3.8. p24)

CID explains the importance of not underestimating the potential for cycle-shopping trips (4.3.2, p23)

**Length of cycle trips:** CID acknowledges that cycle journeys are not necessarily short (i.e. under three miles). It says that over five miles is not uncommon for commuters and that novices and leisure cyclists will cycle longer distances 'where the cycle ride is the primary purpose of their journey'. This acknowledges that cycling is not limited as a transport mode and, in consequence, does not deserve limited provision. (1.5 'Typical cycle trip distances', p14)

**Cycle audits:** CID reminds readers that the cycle audit process isn't just about checking that schemes don't affect cyclists unduly, but that they should also be used to identify opportunities for improving conditions for them (1.7 Cycle audit and review, p15)

**Innovation:** CID repeats the Manual for Streets' recognition of the 'reluctance of some authorities to implement innovative schemes or schemes that do not meet all safety criteria, for fear of litigation'. CID proceeds to reassure readers that maintenance defects generate far more claims than deficiency of design and explains how to avoid problems in the first place. Worries about legal action do dampen inspiration and daring, so this should help encourage practitioners to be more confident about exploring untried ideas for the benefit of cyclists (some of which might be suggested by cyclists themselves!) (1.6 'Risk and Liability', p14)

**Consideration for cycling at the outset:** CID says, firmly, that cycle and pedestrian links should not be left as an afterthought when planning a new road scheme or other major works, but 'considered from the outset'. (1.7.7, p15)

**Non-standard cycles:** CID recognises that designers should anticipate the use of 'non-standard cycles', e.g. tandems, tricycles etc. (2.6.2, p18).

**Coloured surfacing and cycle lanes:** the comprehensive list of situations in which coloured surfacing is appropriate is useful. We are pleased to see CID state that such surfacing is 'especially useful for cycle lanes away from the kerb, such as non-nearside cycle feeder lanes for an advanced stop line [ASL] layout, or where a cycle lane runs along the offside of a dedicated left-turn lane' (3.2.3. p19) - but it would be good to see this advice repeated later in the discussion on non-nearside ASL feeder lanes at 9.4.9, p56. CID should also make it clear that where a cycle lane, marked by a coloured surface, encounters a side-road entrance, the colour should continue, but the lane marking should stop for the duration to give cyclists discretion over where to ride most safely (which is sometimes further out into the road than the lane indicates) (3.2.2, p19).

**Road closures:** CID advises that, when closing off the end of a street, 'consideration should always be given to allowing cyclists to continue using the route by installing a cycle-gap in the closure.' This is excellent advice in the interests of accessibility and convenience (4.2.1, p22).

**Cycle exemptions:** CID states that, unless safety concerns dictate otherwise, cyclists should usually be exempt from prohibited turning movements or manoeuvres under the prohibition Order (4.2.4.p22).

**An urban environment that favours cycling:** CID recognises that 'careful urban design can help to create an attractive and functional environment in which cycle speeds are low and pedestrians have priority'. CID suggests that trees and benches etc can suggest a 'preferred route of cyclists' without the use of road signs. This is a relatively modern approach in the UK and it's good to see this included. (4.3.10, p24).

**Cycle bypasses:** CID says that cycle bypasses should allow cyclists to circumvent the problems presented by pinch points created by

physical traffic calming measures, central reserves, refuges etc - altogether this section is welcome (5.2, p28).

**Removal of centre lines:** CID explains why and in what circumstances the removal of centre lines may help reduce speeds without a detrimental effect on cyclists - again, this is a relatively innovative measure that not only helps relieve speeding problems on certain roads, but may also result in the allocation of more road space to cyclists (5.3, p28)

**Roadworks:** CID recommends a minimum gap of 4 metres to ensure that cyclists can get past roadworks safely (unless there's a cycle bypass or additional features to significantly reduce motor vehicles speeds are incorporated). (5.7.2. p30)

**Cycles in bus lanes:** CID supports the use of bus lanes by cyclists and recognises that they 'are often preferred over off-road facilities as a result of the advantage of remaining in the carriageway and therefore having priority at side roads.' (6.1.1. p32)

**Access control:** this section spells out the problems that some types of barriers (e.g. those barring motorcycles) can cause cyclists, particularly those with non-standard machines, panniers, etc and offers good advice on best practice in a variety of circumstances. CID stresses that motorcycle barriers should only be used after a definite need has been established (unfortunately, this has not always proved to be the case) (8.14, p48)

**Tactile paving:** this explains the correct way of installing tactile paving clearly. Our experience shows that authorities/contractors have been known to get this wrong. It would be helpful, though, if the advice emphasised the dangers of cyclists' skidding on this sort of paving rather more strongly (8.16, p50)

**Maintenance:** this section goes beyond the advice given in the standard reference source for establishing standards for cycle routes and includes a table advising on a typical maintenance programme. CID even suggests: 'It is worth considering consultation with local user groups on proposed maintenance standards'; and that 'routine and safety inspections are best carried out from a bicycle.' However, we do feel the table needs fewer 'n/a' entries under the 'time of year column'. We would, for example, suggest that authorities sweep to clear leaf litter and debris 4 times a year and at least twice during leaf-fall. (8.17, p50 - 52)

**Gully Gratings:** it's good to see clear advice on the importance of orientating gully slots at right angles to the direction of cyclists' flow to avoid caught wheels (although this should apply wherever they are located, not just at transition points from cycle track to carriageway) (8.9.3, p46)

**Junctions:** highlights in this section (9, p53-59) are advice on:

why, when and how to extend the inter-green period for the benefit of cyclists at signalised junctions;

cycle lanes that bypass the main signals with their own phase or green signal;

the advantages of continental-style roundabouts for cyclists. This type of roundabout design is a seriously under-used solution;

the advice that keeping to the nearside of the circulatory carriageway puts cyclists 'in the most hazardous position for being hit by vehicles entering or leaving the roundabout.'

how cyclists do (or ideally should) negotiate roundabouts and the ways in which design can serve their best interests (e.g. by inducing lower speeds)

**Cycle parking:** (11, p70-75), we welcome CID's notes on the provision of residential storage and the significant effect on cycle use that having a 'cycle ready and available at the front of a house, rather than locked away at the back' can have.

**Cycling and public transport:** this section promotes the importance of integrating cycle and public transport travel and summarises best practice advice on how to cater for it (12, Public transport integration p76 - 78)

### **Cycle Lanes (7. p35-40):**

CID states prominently that: 'Cycle lanes can benefit cyclists, but poorly designed lanes can make conditions worse for them. There is no legal obligation for cyclists to use cycle lanes (or any other type of cycle infrastructure provision)...' (7.1.1. P35)

CID advises practitioners of the link between official training recommendations on a cyclist's road position and the presence and layout of a cycle lane: CID says, 'Designers need to decide whether a cycle lane is going to help or not. If so, its alignment should ideally reflect guidance and training on safe techniques (Franklin 2007) for manoeuvres undertaken by cyclists.' (7.1.4, p35). Unfortunately, it's not uncommon for cycle lanes to steer cyclists into exactly the positions (e.g. too near the kerb or side junctions) that make them most vulnerable, likely to encounter gratings, to be overtaken too closely and/or out of drivers' sightlines. This is particularly risky for novice cyclists, who may naturally assume that the lane is there to protect them.

CID also recognises that a narrow cycle lane can give drivers the misleading impression that this is all the room a cyclist needs, thus encouraging them to overtake too closely. CID says: 'Drivers do not always realise that cyclists need to move away from the kerb to avoid surface hazards and may expect cyclists to stay in lane regardless of its width. A narrow cycle lane may therefore give motorists (misplaced) confidence to provide less clearance while overtaking than they would in the absence of a cycle lane.' CID goes on to offer sensible advice on what to do where localised width restrictions might otherwise tempt practitioners to reduce a cycle lane to an unacceptable width: 'At localised carriageway width restrictions, designers can continue a full-width advisory cycle lane alongside a sub-standard all-purpose lane, or the cycle lane can simply be discontinued. A narrow cycle lane should not be used here.' (7.4.3, P37)

CID notes very clearly the potential for cyclist v driver conflict at the mouths of side roads, where they are crossed by a two-way cycle facility: a driver waiting to emerge may not expect to come across cyclists approaching from two directions.

CID notes that 'A cycle lane downhill can make conditions worse for cyclists' (because the speed differential with motor traffic reduces or disappears and the cyclist has to take up a more prominent position further out from the kerb).

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