

A.02 Speed Reduction

Key Principle

Reducing traffic speeds can help to reduce or eliminate the need for special facilities for cyclists as well as contributing to casualty reduction and the creation of a more 'people friendly' environment.

Design Guidance

Background

Cycle Infrastructure design

5.1.1 Many cyclists feel comfortable on roads with no cycle-specific infrastructure if traffic speeds are low enough. Lower speed not only reduces the likelihood of an accident, but it also reduces severity of injury in the event of one.

A number of measures are available to create and maintain lower traffic speeds and these are outlined below. In each case, the designer should ensure that none of them introduces difficulties for cyclists.

Lower speed limits

A reduction in traffic speeds will always benefit cyclists. Since 1999, it has been permissible under certain conditions to apply 20 mph speed limits with few, if any, obvious measures to reduce speeds. The effectiveness of such limits can sometimes be increased by using them in conjunction with environmental improvements such as varied surfacing materials, narrowed carriageways, and the layout of on-street parking areas. These features often overcome the need for additional traffic calming in the form of road humps (see [A03 Traffic calming](#)) or cycle-specific measures.

Manual for Streets:

7.4 Achieving appropriate traffic speeds

7.4.8 A speed limit is not an indication of the appropriate speed to drive at. It is the responsibility of drivers to travel within the speed limit at a speed suited to the conditions. However, for new streets, or where existing streets are being modified and the design speed is below the speed limit, it will be necessary to include measures that reduce traffic speeds accordingly.

Locations with high levels of cycling and walking, such as outside schools or in shopping streets, will particularly benefit from 20 mph limits as reduced speeds will improve conditions for both modes of travel. In these situations, cycle-specific measures are rarely required for safety reasons. However, they may be useful if they improve permeability for cyclists, thus giving them an advantage over motorised users in terms of journey time or accessibility to local services.

Recent pilot schemes for 'Mixed Priority Routes' have demonstrated a variety of measures that have improved conditions for pedestrians and cyclists using busy traffic routes through shopping areas. For example, Newlands Ave in Hull has achieved substantial increases in the number of cyclists and pedestrians and significant reductions in vehicular speed, with only a small reduction in traffic volumes.

Manual for Streets:

1.6.1 The main changes in the approach to street design that MfS recommends are as follows:

- 🚲 designing to keep vehicle speeds at or below 20 mph on residential streets unless there are overriding reasons for accepting higher speeds;

Home zones

The objective of a home zone is to create a better living environment where children may play and neighbours may meet without being dominated by motor traffic. A home zone also creates a better place to cycle and walk thanks to the removal of the speed differential between different modes of travel. This is achieved by bringing traffic speeds down to 10mph or less through the use of features such as narrowed streets, tight curves, limited visibility and layouts that require frequent changes of course. This approach can be applied to new build as well as retro-fitted to existing streets.



Southville Home Zone Bristol

Picture ©Alex Sully
Transport Initiatives

Shared surface roads

Experience in the Netherlands, and more recently in the UK, has shown that under certain conditions, the introduction of a single level surface for all users, i.e. without kerbs or other measures to define a users' space or route, combined with the removal of road signs and markings has resulted in a safer road environment. This is the concept of shared surface roads, sometimes known as self-explaining roads (see [A01 Invisible Infrastructure](#)).

The absence of these features makes the road users' situation ambiguous because information that would normally be available to drivers has been considerably reduced or is missing altogether. As a consequence, the motorist relies on observing the behaviour of other users, especially pedestrians, in order to negotiate their way through. For this reason, eye contact becomes much more

important than usual. It is thought that the reduced speeds that result are due to the motorist needing to allow more time to assimilate the available information and make judgements about the behaviour of others who are no longer constrained within expected patterns of movement. Clearly, this is of no benefit to those who are unable to establish eye contact and so consideration should be given to the provision of guidance paving, or similar, to ensure that there is a legible route for blind and partially sighted people in areas frequented by motor traffic.

Removal of centre lines

Where it is desirable to provide cycle lanes (see [A11 Cycle Lanes](#)) but there is insufficient room to do so it may be appropriate to remove the centre line and replace the two existing lanes with a single, centrally positioned, two-way general purpose traffic lane with advisory cycle lanes located on either side. It has been found that in the right circumstances (see [A12 Removal of Road Centrelines](#)) this technique can bring about a reduction in both traffic speeds and accident levels.

Quiet lanes

This approach is only suitable for rural roads where existing traffic speeds are already low and flows are light. The status of these roads is designated by the local authority, under Section 268 of the Transport Act 2000, for shared use by walkers, cyclists, horse riders and motorised users. This designation is indicated by special 'Quiet Lanes' signs. Pilot studies in Norfolk and Kent have shown that the success of a Quiet Lanes scheme is dependent upon community participation and consensus building rather than extensive engineering and speed reduction measures.

Publications

[Cycle Infrastructure Design](#) - Local transport Note 2/08, DfT 2008

[Manual for Streets](#) DfT, Communities & Local Government 2007

[Setting Local Speed Limits](#) DfT Circular 01/2006

[TAL 2/06 Speed Assessment Framework](#) DfT 2006

[TAL 2/04 Rural traffic calming - Bird Lane, Essex](#) DfT 2004

[TAL 7/91 20 mph Speed Limit Zones](#) DfT 1991

[TAL 8/02 Home Zones - planning and design](#) DfT 2002

[Home Zone Design Guidelines](#) IHIE 2002

[Designing for Disabled People in Home Zones](#) JMU Access partnership, 2007

TAL 3/90 Urban Safety Management - Guidelines from IHT DfT 1990 ([available from DfT](#))

[TAL 3/04 Quiet Lanes](#) DfT 2004

[Transport Act 2000](#)

[Shared Surface Street Design Research Project](#) Guide Dogs 2006

[Cycling England Gallery](#) pictorial examples

[Rural Road Traffic Calming – Information Sheet ff38](#) (pdf – 792kb) Sustrans

[London Cycling Design Standards – A guide to the design of a better cycling environment](#) (Sections 3.4, 3.5, and 3.6) TfL 2005

[CTC Benchmarking](#) – Best practice case studies

Other references

Norfolk Quiet Lanes Pilot Project: Technical Report 1 - Public Engagement and Scheme Implementation Norfolk County Council August 2000

[Cycle Friendly Infrastructure - Guidelines for Planning and Design](#) Bicycle Association et al 1996

Safer By Design – a guide to road safety engineering, 1994, DoT

Roads in the Countryside, Countryside Agency 1995

Design Issues for Rural Traffic Management, Countryside Agency 2000;

Rural Routes and Networks, ICE/Countryside Agency 2002.

Dutch 30kph zone design manual, 1991, TRL