

A.01 Invisible Infrastructure

Key Principle

Cycle-specific infrastructure should not be introduced without first establishing whether cyclists' needs would be better met through demand management or traffic management measures that reduce both the volume and speed of motor traffic.

Design Guidance

Background

Cycle Infrastructure Design

4.1.1 Schemes that reduce the impact of motor traffic can help deliver a pleasant environment for cyclists, pedestrians and disabled users, as well as meeting other policy objectives such as increasing walking and cycling as well as improving health and the environment. They can also reduce the need for cycle-specific infrastructure.

In meeting the needs of cyclists within the highway network, it is not always necessary to do so through the provision of cycle-specific measures or by expenditure from cycling budgets. As the [Hierarchy of Provision](#) (Local Transport Note 2/08 Table 1.2) for cyclists makes clear, cycle-specific measures should only be considered after opportunities to reduce the impact of motor traffic have been exhausted.

Changes to the network which improve conditions for cyclists but do not appear to be related specifically to cycling may be said to realise the concept of 'invisible infrastructure'. In many cases, invisible infrastructure may preclude the need for any cycle-specific provision.

Manual for Streets:

1.1.4 Streets should not be designed just to accommodate the movement of motor vehicles. It is important that designers place a high priority on meeting the needs of pedestrians, cyclists and public transport users, so that growth in these modes of travel is encouraged.

2.3.6 The need to cater for motor vehicles is well understood by transport planners, but the passage of people on foot and cycle has often been neglected. Walking and cycling are important modes of travel, offering a more sustainable alternative to the car, making a positive contribution to the overall character of a place, public health and to tackling climate change through reductions in carbon emissions.

3.6.8 User hierarchy

Consider first

Pedestrians
Cyclists
Public transport users
Specialist service vehicles (e.g. emergency)

services, waste, etc.)

Consider last Other motor traffic

6.4.1 Cyclists should generally be accommodated on the carriageway. In areas with low traffic volumes and speeds, there should not be any need for dedicated cycle lanes on the street.

A broad range of invisible infrastructure approaches is available to local authorities. These include:-

- Road pricing/congestion charging to discourage traffic from using roads within the central core area of towns and cities,
- The management of car parking through cost and availability, workplace parking charges and the creation of residents' parking areas,
- Traffic management and calming measures including vehicle exclusion, homes zones, area wide 20 mph zones etc,
- Redistribution of the carriageway such as the introduction of bus lanes or widened nearside lanes,
- Land-use and development policies that reduce the need to travel and encourage reduced reliance on private car use,
- Public transport policies, infrastructure and services that create a viable alternative to car use and facilitate multi-modal journeys such as bike and rail,
- The encouragement of workplace and school travel plans,
- Individualised travel marketing,
- The introduction of innovative treatments such as 'Shared Space' urban areas.

These can all help create a more cycle-friendly environment without appearing to be specifically aimed at encouraging cycling. Invisible infrastructure often has a greater impact on the overall level of cycling than cycle-specific measures. It may be possible for an authority to achieve almost all of its cycling objectives through invisible infrastructure with only limited recourse to measures specific to cyclists such as cycle parking and advanced stop lines.

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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;

2.2.5 Streets that are good quality places achieve a number of positive outcomes, creating a virtuous circle:

- 🚲 attractive and well-connected permeable street networks encourage more people to walk and cycle to local destinations, improving their health while reducing motor traffic, energy use and pollution;

Designers should, however, be aware that some aspects of non-specific infrastructure can have a negative effect on cycling. These include width restrictions that do not cater for cyclists, omission of cycle parking within designs and barriers to access such as ring roads, rear service roads etc. The adverse impact on cyclists of measures such as these together with other 'hostile' infrastructure, including roundabouts, left turn filter lanes, slip roads and junctions that encourage high speed manoeuvres can often be reduced or removed altogether by undertaking a cycle audit of all changes to the highway (see [A15 Audits and Risk Assessment](#)).

Nevertheless, the expenditure of cycling budgets need not be confined to cycle-specific measures. Conversely, the level of expenditure from an authority's dedicated cycling budget is not necessarily the sole indicator of its commitment to creating a cycle friendly environment.

Publications

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

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

[Cycling England Gallery](#) pictorial examples

Other references

Invisible Infrastructure, Alex Sully, Velo-City 2005

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