

Minimising Pedestrian-Cyclist Conflict on Paths



Information Note No 4

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Infrastructure planning

The planning of bicycle infrastructure, in terms of type, location and capacity, has a fundamental impact on the extent to which it is 'fit for purpose'. Paths that are not 'fit for purpose' are far more likely to experience conflicts between users than those that have been appropriately planned and designed (see Information Note 5, *Infrastructure Design*).

The cycle/pedestrian infrastructure network planner must have a clear idea of the functions of the network and its components, especially what the needs and capabilities of the intended users are. Different types of facilities will be appropriate for different types of users (Austroads 1999).

The main issues (see *Overview*) addressed by this Information Note are:

- footpath users
- people with disabilities
- young/inexperienced users
- user behaviour: awareness
- user behaviour: operational
- speed
- shared strategy/planning
- network continuity
- path location
- design standards
- path capacity
- path access and continuity
- signage and information.

Issues in path network planning

This strategy involves planning which takes into account the following issues:

- integration of planning
- connected and permeable networks
- traffic free routes
- shared paths

- on-road enhancements for experienced cyclists
- separate paths for cyclists and pedestrians
- reclaiming residential streets from the car.

Integration of planning - bikeability

Infrastructure planning options to minimise conflict between cyclists and pedestrians include:

- integrated planning – land use/transport, multi-modal
- connected and permeable networks (see Information Note 3, *Urban design and place-making*)
- at a route planning level, the use of tools such as the *Route Based Bikeability Checklist*, (Australian Bicycle Council 2005). The checklist is designed to review a route within a municipality and allows local governments or other organisations to identify any issues that may exist and highlight where improvement can be made for different categories of cyclists.

BIKEABILITY TOOLKIT ROUTE BASED CHECKLIST	
<small>The Route Based checklist is designed to review a specific route within a municipality. It will allow local government or other organisations to identify any issues that may exist and highlight where improvement can be made for different categories of cyclists. It is recommended that you review this checklist, ride the route ('saddle survey'), then complete the checklist. For potential solutions to issues identified by the checklist, refer to relevant sections of Austroads Part 14 (www.austroads.gov.au) and/or your state Cycle Notes or Guidelines (download Resources for details). The checklist will ask questions which require an answer as indicated in the column heading. Answers may vary for each category of cyclist. Complete the checklist for each category if possible. To allow for future review of the checklist, it is recommended that this first section be completed by the person undertaking the checklist. This will provide a reference point for future updates.</small>	
Local Government Area (or areas if route crosses municipalities)	
Town or city	
Person completing checklist	
Date	
Name	
Organisation	
Position	
Description of Route taken to complete checklist (Please enter description of route being checked.)	
Origin	
Destination	
Via	
Major intersections or features along route	
Why has this route had a bikeability checklist undertaken? (please tick)	
<input type="checkbox"/> Link in Local Network	<input type="checkbox"/> Link to shop/business centre
<input type="checkbox"/> Leads to major attraction	<input type="checkbox"/> Identified for potential upgrade/works
<input type="checkbox"/> Other (please state)	
How to use this Guide	
<ul style="list-style-type: none">• Complete by entering the most appropriate response to each question as indicated in the column heading.• You can complete the checklist from the perspective of different 'types' of cyclist to ensure that facilities are suitable for most cyclists.• Add your notes in the comments box. Use reverse side of form if insufficient space available.• Download and review resource materials to provide further information and assistance.• Assessment is through counting frequency of responses - not a good or bad score!	
<small>The Bikeability Checklist is not designed to evaluate your Local Government, but to enable a review and to identify areas of potential improvement.</small>	
Refer to the downloadable resources and glossary documents to assist you where necessary.	
Bikeability Toolkit - Route Based Checklist	
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Route-based Bikeability Checklist (Australian Bicycle Council 2005)

Traffic-Free Routes

Traffic free routes, which are by definition almost entirely off-road or use roads closed to motor vehicle traffic, are very popular for encouraging formerly inactive people to take up walking and cycling regularly.



Traffic-free routes can be established in existing developed areas

Opportunities exist to minimise interactions with external influences (especially traffic) and manage those that are unavoidable (e.g. at road crossings). Hence, users are not distracted from awareness of the actions of other users.

Shared paths

Shared paths are the most common off-road provision for cyclists in Australia. In principle, shared paths are suitable for most kinds of users, provided they are designed (see Information Note 1, *Is the Path the Problem?*), constructed and maintained (see Information Note 6, *Path Construction and Maintenance*). However, problems are likely to arise at high levels of usage.

Planners of shared paths need to understand the patterns and habits of potential users of the facility. Hence the following steps need to be considered in the planning stage:

Consultation: Early consultation with all potential user groups is essential to ensure that proper account is taken of their concerns in order to construct a successful path (Queensland Transport 2004, Sustrans 2000).

Key ways to engage the community include the following techniques (Queensland Transport 2005):

- group – public meetings/forums, workshops, consultative liaison committee/group
- personalised – individual discussion, surveys, interviews, open house, verbal or written submissions

- information distribution – display and exhibitions, information bulletins and brochures, websites, e-mail.

Observation: Observation of potential users in the vicinity of proposed path sites can reveal a preferred path, e.g. an informal path network through a park. It can also provide information on the type, volume and speed of potential users as well as site conditions that may result in design restrictions. Observing paths in similar locations may also be of use.

Demand estimation: This should be undertaken in order to determine latent demand. Whilst there are few models available to estimate latent demand (see Landis (1996) for an example of a model), Austroads (1999) provides guidance for estimating demand for cycling facilities.

Separate pedestrian and cycle paths

Shared pathways are generally not satisfactory in high traffic areas, and may discourage walking especially amongst the young, seniors and persons with disabilities.

Pedestrian and bicycle segregation may need to be planned and provided for if high usage is envisaged, although a shared facility may be adequate at first. If separation is likely to be desirable at some stage, it should be undertaken before conflict between users becomes so great that it starts to become a deterrence.

Paths can be segregated by a median kerb, vertical or grade separation (75-100 mm), fence or landscape barrier, or horizontal separation (at least 1.0 m, but preferably 2.0 m). Any physical barrier or change of level is a potential hazard and additional width may be required.



Separated paths should be at least 1 metre apart.

On-road enhancements for cyclists

Paths, especially in the road verge, may not provide a suitable level of service for commuter cyclists in particular. Use of shared paths by commuter cyclists, who are likely to operate at higher speeds than many other cyclists, is likely to result in conflict with other users – both pedestrians and cyclists.

Where commuter cyclists are likely to be a substantial proportion of users, alternatives for cyclists, such as on-road provision and alternative routes, subject to criteria of directness, convenience and safety should be considered. For commuter cyclists, on-road cycle lanes may be preferable to shared paths, as they usually have a better surface and fewer hazards.



On-road enhancement for experienced commuter cyclists can make the path more pedestrian-friendly.



Alternative on-road routes should be clearly signed.

An On-Road Provision Scheme (and six similar ones) in Hull, England, resulted in:

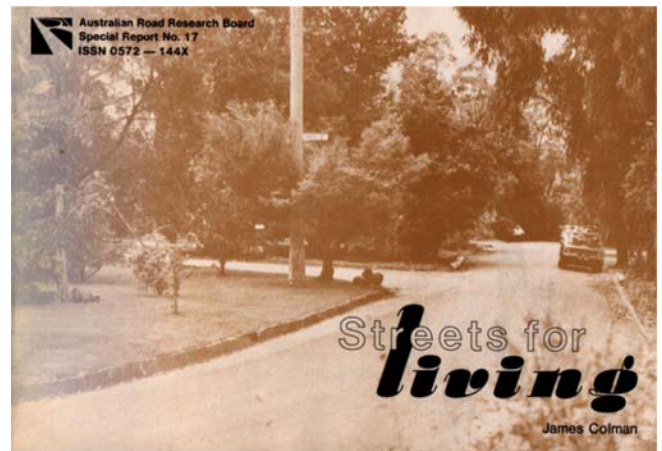
- increased cycle flows (by up to 138%)
- 45% reduction in cycle casualties
- 11% reduction in pedestrian casualties (Department for Transport 2004a).



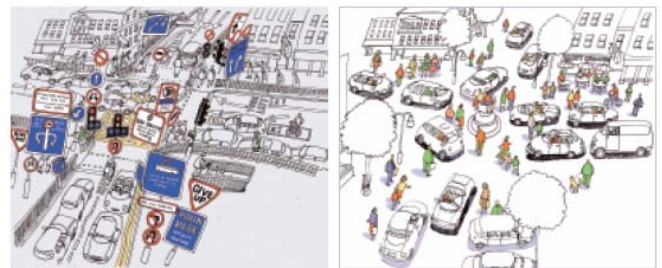
Reclaim Residential Streets from the Car (DTLR 2001)

Cyclists sometimes feel forced to use paths, even footpaths on residential streets, because the roadway is too hazardous. Local area traffic management can slow motor vehicles and reduce traffic volumes but can easily create additional hazards for cyclists, such as squeeze points. An alternative is to visibly reorder priorities so that the motor vehicle is seen as the intruder and priority is given to people – pedestrians and cyclists.

This is not a new issue, having been addressed as long ago as 1978 (Colman 1978), but the opportunities and acceptance are likely to have changed. As a result of a recent study (WSP 2004), a new *Manual for Streets* is being developed by the UK Department for Transport for anticipated publication in 2006.



Reclaiming streets from the motor vehicle is not a new concept (Colman, 1978) ...



Streets ahead

The response of the majority of highway authorities to problems of traffic and speeds is to add more signs, signals, barriers and road paint. But there is another way, says architect, urban planner and transportation specialist Ben Hamilton-Baillie

... but the vision has changed to be more overtly people-focused (www.shared-space.org).

Other planning options to be considered include the following:

- providing cycling paths for people living in inner suburbs, particularly for roads where a cycling path could run along the outer perimeter of a road
- placing paths away from property fence lines to increase visibility of path users to motorists backing out of their driveways

- making paths into 'linear parklands' where right angle entry is not easily achieved.

Footpaths

Since the introduction of the Australian Road Rules, footpaths have been able to be used by cyclists up to the age of 12 years in all States and Territories. In some jurisdictions (Queensland, Tasmania, ACT and NT), cyclists of all ages are permitted to ride on footpaths.

In New Zealand, riding on a footpath is only permitted where the footpath is signed as a cycle path.

The design standards for footpaths (Austroads 1995) were not intended to accommodate such uses and may contribute to conflict between pedestrians and cyclists – and between cyclists as well. Sight lines, particularly at path intersections and property driveways, are not designed for the higher speed of even primary school age cyclists. This is especially evident where a path adjacent to a property boundary fence might have insufficient width for safe and convenient sharing.

Where footpaths are likely to be used by a large number of cyclists and pedestrians (for example, in the vicinity of schools), consideration should be given to upgrading the path, either by enhancing the standard as a footpath or by converting to a shared path with appropriate design standards.

In the United States, experience with 'sidewalk bikeways' has led to the Federal Highway Administration (FHWA undated) recommending that 'sidewalks should not be signed as bikeways' (see box below).

The result of this is that allowing cyclists to use footpaths should not be used as a reason for inadequate provision for cyclists on the roadway (see also 'On-road enhancements for cyclists', above in this Note).

Some early bikeways used sidewalks for both pedestrians and bicyclists. While in rare instances this type of facility may be necessary, or desirable for use by small children, in most cases it should be avoided.

Sidewalks are not suited for cycling for several reasons:

- Cyclists face conflicts with pedestrians.
- There may be conflicts with utility poles, signposts, benches, etc.
- Bicyclists face conflicts at driveways, alleys and intersections: a cyclist on a sidewalk is generally not visible to motorists and emerges unexpectedly. This is especially true of cyclists who ride opposing adjacent motor vehicle coming from this direction.
- Bicyclists are put into awkward situations at intersections where they cannot safely act like a vehicle but are not in the pedestrian flow either, which creates confusion for other road users.

Cyclists are safer when they are allowed to function as roadway vehicle operators, rather than as pedestrians.

Where constraints do not allow full-width walkways and bikeways, solutions should be sought to accommodate both modes (e.g. narrowing travel lanes or reducing on-street parking). In some urban situations, preference may be given to accommodating pedestrians. Sidewalks should not be signed for bicycle use – the choice should be left to the users.

Source: FHWA (undated)

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