6.9 Countermeasures for Pedestrian Accidents

6.9.1 Introduction

All road users are pedestrians for one or more stages of every journey even if it is just a short walk from office to car park. Shorter journeys are more likely to be made on foot. Even in the UK, with relatively high car ownership, over 60 per cent of journeys under 1.5 km long are made solely on foot. In urban areas in the UK about one-third of all journeys are made entirely on foot. In developing countries walking is even more important as a mode of transport, both in terms of the number and length of journeys made on foot, yet facilities for pedestrians are often sadly lacking.

Pedestrians, particularly the young and elderly, are the most vulnerable group of road users. They do not have the protection of a vehicle's bodywork to keep them from injury in a minor collision. Indeed it is that very same metal bodywork which protects a car driver that may kill a pedestrian. Because they are unprotected it is essential to consider pedestrians' needs within the transport system and to give them greater consideration than other road users. In an accident pedestrians are much more likely to be injured or killed.

European experience in new towns has shown that segregation of pedestrian and vehicular traffic by creating separate networks for each can bring about very significant improvements in pedestrian safety. Unfortunately, apart from in new developments, extensive segregation is seldom likely to be economically feasible. Alternative methods need to be found to improve pedestrian safety on existing networks. Industrialised countries have developed a number of ways of achieving improved pedestrian safety, some of which are discussed in following sections.

The great majority of pedestrian movement is local in nature. It takes place on footways adjacent to carriageways or on the edge of the carriageway. It therefore follows that the problem of pedestrian/vehicle conflict must be an important consideration in highway design and traffic management. Attention needs to be paid to minimising conflicts and providing facilities for pedestrians which are safe, convenient and pleasant to use.

Pedestrian activities range from trips concerned only with direct travel between two points to those which have a more diverse or recreational character. In some areas footways are also used for play, market areas or places where people congregate and talk. All of these aspects should be considered in the design of pedestrian facilities.

Problems
Footways in developing countries are often obstructed by hawkers' stalls, commercial activities and parked cars. Action can be taken to clear the footways through enforcement or by better engineering (i.e. high kerbs or poles at the pavement edge to prevent encroachment by parked cars). Where pedestrian flows are heavy and the footway is too narrow, widening should be considered. The introduction of small kerb radii at intersections to slow turning traffic, can also help pedestrians cross the mouths of side roads more easily by slowing traffic. There may even be benefits in continuing the footway of the main road across the side roads to create "raised crossovers". This enables pedestrians to proceed on the level while drivers have to manoeuvre slowly over the raised crosswalk (Fig 6.53).

To encourage usage, footways need to be reasonably even and well drained. Vegetation should not be allowed to obstruct the footway. When construction work is in progress alternative temporary arrangements must be made for pedestrians displaced from the footway by building works.

When pedestrians are involved in a substantial proportion of accidents at a particular site their needs must be considered carefully in the design and selection of countermeasures. Where possible, measures which segregate vehicles and pedestrians should be used. A selection of these are discussed in subsequent sections. Earlier parts of this Guide have described pedestrian facilities in terms of design of footways (sections 4.1.17, 4.1.18 and 4.2.9). The countermeasures described in this section relate more to protecting pedestrians with fences or barriers and to facilities which make crossing the road safer.

**Possible Solutions/Benefits**

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**Fig 6.53**
Raised footway continued across minor road in the UK reduces speeds and enhances pedestrian safety whilst permitting access (TRL)

**Fig 6.54**
Chicanes with local road narrowing offer a means of reducing speeds and improving conditions for pedestrians (UK Department of Transport)