

Making roads safer and more accessible

Guidelines for Road Planners and Engineers

Good road design can reduce accidents and save lives. Walking is still the most common form of transportation between home, workplaces, and social services in Papua New Guinea. 80% of the population live in rural areas, and most pedestrians, including people in wheelchairs, travel on the roads (due to lack of footpaths). Therefore it is important to ensure that people with disabilities, as well as others, can access roads safely as pedestrians. Unfortunately, pedestrians, either with or free of disabilities, are only too often the victims of road accidents.

Accessible road design provides a safer environment for all: people with disabilities, older people, pregnant women, and children as well as the general public. Improving road access and safety for pedestrians is low cost in relation to GDP and overall road costs, and it is much less expensive and disruptive to include access measures at the onset of a project than to try to retrofit later. Apart from the obvious implications of reducing the tragedy of road accidents, it is also much less expensive and productive to reduce the risk of accidents than to deal with the healthcare and economic costs of injuries and deaths caused by traffic accidents.

Posted speed limits: should be introduced for local roads in urban and built up areas, as well as national roads passing through villages in rural areas. In such locations, the recommended speed limit is 40km per hour. Sign posting is essential, and traffic calming devices are recommended as discussed below, to ensure that drivers do slow down to match the posted speed limit.

Speed restrictions: need to be achieved by the following measures.

Road signs: To be of a form and to be located in accordance with DoW standard details. For example, SPEED LIMIT signs, STOP signs to be provided at pedestrian crossings.

Traffic calming measures, to control speed to within posted limits in urban and built up areas: To comprise road markings, speed humps (short or wide), pedestrian refuges at mid width of roads, and where it is warranted by pedestrian volumes, traffic lights. DoW has some standard details, but these need to be extended to cover all calming measures, together with guidance on use.

Education of driving public: Whilst this critical activity will be driven by the policy makers, the engineering and planning authorities can support the activity by:

- ♦ Identifying 'traffic black spots';
- ♦ Identifying heavily trafficked roads where signage will have most effect;
- ♦ Suggesting wording for notices and advertisements.

Enforcement: which is the responsibility of the policy makers, the police and judiciary.

Standard Engineering Details for Roads.

DoW does publish standard details for a number of road safety measures which relate to pedestrians, including signs, footpaths and speed humps. DoW should extend this suite of details to include other provisions such as pedestrian refuges, ramped crossings and bridge footway egress, traffic calming measures. Recognised standards such as those published by Queensland Department of Main Roads, may be adopted: www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Standard-drawings-roads.aspx

In areas where there is significant pedestrian traffic, it is important to maintain the road surface in good conditions without potholes, so that traffic will run smoothly and pedestrians crossing in wheelchairs are not restricted.



Pedestrian Crossings of Roads: Shall be provided at schools, health care centres, major trade stores, commercial centres and markets and PMV stops, or wherever there is significant pedestrian usage identified by survey. Disabled Persons Groups should be consulted in relation to crossing locations. Minimum width of crossings shall be 1.2m, and crossings shall be marked with standard 'zebra' wide stripes. Where there are kerbs, crossings shall be ramped from the footpath. Where vehicular traffic is heavy, a central pedestrian refuge shall be provided. Road signs shall be provided well before the crossing with STOP signs at the crossing, all in accordance with DoW standard details.

Footpaths: Shall be provided to both sides along roads in urban areas or in villages in rural areas wherever the volume of pedestrian traffic justifies, and in particular, in the vicinity of essential services including schools, health care centres, trade stores, markets, commercial centres, and PMV stops. DoW standards shall apply. Footpaths shall be of 1.8m width generally and where this is not possible, not less than 1.5m, and shall be evenly graded and drained. Surfaces may be of concrete, brick paving, bitumen or other hard packed, smooth and durable materials. Cross grade shall be 3% maximum, and longitudinal grade 8% maximum generally and 12% absolute maximum. Footpaths shall be clearly separated from vehicular traffic and from parking or other uses such as markets, and shall be kept clear of rubbish or vegetation. There shall be no steps or changes of level or open drains intersecting the footpath, and ramped crossings will be provided at kerbs, in accordance with standard details.

Bridges: Footways should be provided on all new bridges, with minimum clear width of 1.5m, and separated from the road surface by a kerb or other means, in accordance with DoW standard details. At the ends of bridges, the footway should be provided with a concrete ramp back down to the foot path surface, at a minimum grade of 8%. In villages where there is a bridge without a separate footway, the provision of a separate footway shall be afforded priority status in the planning.



Public Motor Vehicle (PMV) Stops: should be provided with a dedicated pull off area, such that the vehicle can safely access and exit and take time to load / unload pedestrians including disabled pedestrians safely. Stops should be marked with sign posts. Clear marking and seating for pedestrians should be provided, without disrupting the footpath. Kerbs should be avoided, to enable wheelchairs to load with ease. Aim should be to provide a shelter with lighting. PMVs themselves should have signs stating destination or route number.

The above information is provided for guidance and is complementary to the following DoW Standard Engineering Drawings. Specifically:

- ♦ Road Signs
- ♦ Footpath Details
- ♦ Footpath Details alternative
- ♦ Speed Humps
- ♦ Standard Kerbs and Crossings
- ♦ Standard bridge cross section

OTHER USEFUL RESOURCES

- Queensland Australia Department of Main Roads Standards
- Universal Design Guidelines for the Australian Aid Program
- Development for All: towards a disability inclusive Australian Aid Program 2009–2014
- PNG National Policy on Disability Overview (2009)
- WHO / World Bank World Report on Disability (2011)

