Technical Note 38

Longitudinal Grades for Footpaths, Walkways and Bikeways

January 2010
1 INTRODUCTION

The aim of this document is to develop a statement for the longitudinal grade of footpaths, walkways and bike paths. Other criteria should be obtained from the reference documents of design criteria.

The aim of this document is to provide guidance for the design of these facilities. It is essential for planner and designers to have a clear understanding of the facility which is to be provided. This will ensure that inappropriate attempts to provide unworkable solutions are not produced.

2 TERMINOLOGY

A footpath is a pedestrian area adjacent to the road which has the same grade as the road. Footpaths are constructed to provide access and pedestrian safety. For logistic reasons, footpaths follow the grade of the road. There are no restrictions about the grade of a footpath.

Walkway is often a special pedestrian route provided to provide pedestrian access between two points. Walkways are required to be able to be used by all members of the community. Walkways are often required as a result of public consultation or to maintain previous access. (For example, a pedestrian overbridge (replacing an at-grade crossing) installed to make a safe crossing must be able to be used by everybody).

Bikeway is primarily used for bikes. Bikeways are usually defined by local authority planning.

Combined walkway/bikeways are usually defined by a local authority and must satisfy the longitudinal grade requirements of a walkway.

3 PEDESTRIAN LONGITUDINAL GRADIENT DESIGN CRITERIA

“Guide to Traffic Engineering Practice, Part 13, Pedestrians” states that AS 1428.1 specifies the minimum requirements for steps, stairs and ramps. Ramps are defined as a convenient means of changes level for people in wheelchairs or with prams.

One of the critical requirements to be solved is the situations when AS 1428.1 is applicable. AS 1428.1 is written in the context of buildings. The scope of AS 1428.1 defines the standard is applicable to design requirements to new building work, excluding work to private residences, to provide access for people with disability. Particular attention is given to access ways and circulation spaces and consistent linkages for use by people who use wheelchairs. It is necessary to arrive at a reasonable interpretation of this document.

Building Code of Australia (BCA) provides advice on this subject. The key points are:-

- Based on physical ability of people there is a maximum elevation that disabled people can reasonably raise themselves. BCA interpretation for a ramp in accordance with AS 1428.1 (slopes 1:14) stipulates the maximum height would be 3.5 metres.

- If we build a long distance pedestrian facility it should be considered a walkway in accordance with AS 1428.1. Walkways are defined as having a grade between 1:20 to 1:33. Walkways without landings shall have a maximum grade of 1:20.

- Federal legislation is applicable to public transport infrastructure access (for example, train station, bus station).
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Step Ramp</th>
<th>Ramp</th>
<th>Walkway including shared bikeway facility, excluding access to transport infrastructure</th>
<th>Access to public transport infrastructure</th>
<th>Footpath</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Grade</td>
<td>1:8 (AS 1428.1)</td>
<td>1:14</td>
<td>1:20</td>
<td>1:33 and no landings</td>
<td>At grade of road</td>
</tr>
<tr>
<td>Maximum elevation</td>
<td>190 mm (AS 1428.1)</td>
<td>3.5 m maximum</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Location</td>
<td>Pedestrian</td>
<td>Usually pedestrian only path</td>
<td>Pedestrian and perhaps bicycles only</td>
<td>Pedestrian and maybe bicycles</td>
<td>Adjacent to road</td>
</tr>
<tr>
<td>Landings</td>
<td>Not required</td>
<td>Required</td>
<td>Not required</td>
<td>Required for 1:14</td>
<td>Not required</td>
</tr>
<tr>
<td>Kerb</td>
<td>Not required</td>
<td>Required</td>
<td>Not required</td>
<td>Required</td>
<td>Not required</td>
</tr>
<tr>
<td>Disability rail</td>
<td>Not required</td>
<td>Required</td>
<td>Not Required</td>
<td>Required</td>
<td>Not required</td>
</tr>
<tr>
<td>Fence on edge</td>
<td>Not applicable</td>
<td>As required by safety audit</td>
<td>As required by safety audit</td>
<td>As required by safety audit</td>
<td>As required by safety audit</td>
</tr>
</tbody>
</table>

4 BIKEWAY LONGITUDINAL DESIGN CRITERIA

Longitudinal gradient design criteria for bikeways shall conform to Austroads, Guide to Traffic Engineering Practice, Part 14 Bicycles.

5 ALTERNATIVE ACCESS FOR ABLE BODIED

An alternative direct path by stairs is permitted for the able bodied provided the entry and exit points of both paths are in the close proximity.

6 REFERENCES

Austroads, Guide to Traffic Engineering Practice, Part 13, Pedestrians
Austroads, Guide to Traffic Engineering Practice, Part 14, Bicycles
Building Code of Australia