

4.7 GRADES

For sidewalks or multi-use paths along Regional roads, the grade should not exceed 5% per AODA standards. Limiting the slope ratio to 5% will help pedestrians with restricted mobility to navigate pedestrian routes independently. One exception to this is locations where the facility is a sidewalk adjacent a roadway with slope greater than 5%. In these cases, the sidewalk grade can match, but not exceed, the slope of the adjacent roadway.

For facilities accommodating cyclists, grades greater than 5% should be avoided. A maximum of 3% is desirable, especially for long uphill grades. Where possible, on long steep grades, it is desirable to introduce relatively flat rest areas approximately every 100 metres of horizontal distance. Where one-way bicycle operation is proposed and cyclists will be travelling in the downhill direction, steeper and/or longer grades are not as much of a concern. It should be recognized; however, that speeds and stopping distances increase when travelling downhill and that the available sight distances must be checked accordingly. Signage to identify steep slopes may be considered for slopes steeper than 10% over stretches of 50 m or more (refer to Section 7 for more detail).

Most cyclists, especially utilitarian cyclists, prefer to ride on relatively flat routes to avoid climbing hills. When hills must be climbed, cyclists tend to require a wider operating area to accommodate the increased side-to-side movement or “wobble” that often occurs when exerting the additional effort necessary to power up a hill.

In these cases, an additional width of up to 0.5 m should be considered on steep hills with grades exceeding 8%, where feasible. In locations where steep grades cannot be avoided, such as in environmentally sensitive areas where recommended grades cannot be implemented without extensive cut or fill procedures, steps and ramps that meet AODA requirements should be provided nearby as alternate routes.

