

- Grade

Grades on shared use paths should be kept to a minimum, especially on long inclines. Grades greater than 5 percent are undesirable because the ascents are difficult for many bicyclists to climb and the descents cause some bicyclists to exceed the speeds at which they are competent or comfortable. The maximum grade of a shared use path adjacent to a roadway should be 5 percent, but the grade shall* generally match the grade of the adjacent roadway. Where a shared use path runs adjacent to the roadway, grades may exceed 5 percent but shall be less than or equal to the roadway grade.

Grades on shared use paths in independent rights of way shall be limited to 5 percent maximum.

Grades steeper than 3 percent are not practical for shared use paths with crushed stone or other unpaved surfaces for both bicycle handling and drainage erosion reasons.

Options to mitigate excessive grades on shared use paths include the following:

- Use higher design speeds for horizontal and vertical curvature, stopping sight distance and other geometric features.
- When using longer grades, consider an additional 4 to 6 feet of width to permit slower bicyclists to dismount and walk uphill, and to provide more maneuvering space for fast downhill bicyclists.
- Install hill warning signs for bicyclists (W7-5) and advisory speed plaque, if appropriate, per the MUTCD.
- Provide signage that alerts path users to the maximum percent of grade as shown in the MUTCD.
- Exceed minimum horizontal clearances, recovery area, and /or install protective railing.
- If other designs are not practicable, use a series of short switchbacks to traverse the grade. If this is done, an extra 4 to 6 feet of path width is recommended to provide maneuvering space.
- Provide resting intervals with flatter grades to permit users to stop periodically and rest.

* Rev. 7/13