

Interim measures for reducing speeds of cyclists

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If cyclists are riding too fast for conditions when passing roadworks, they can pose a risk not only to themselves but also to roadworkers. When roadworkers are working just next to passing cyclists, it can be necessary to reduce speeds of cyclists temporarily during roadworks not only for the sake of cyclist but also to avoid closing down a cycle track and forcing cyclists to make a detour as a result of the health and safety at work act.

The requirements of such interim measures are that they should be easy for the roadworkers to carry, easy to place at the bicycle track, easy to remove when not needed anymore, and of course not pose a danger to cyclists. The aim of this project has been to find suitable measures and afterwards test the effect of each measure. Since it has not been possible to find any suitable existing measures developed for reducing speeds of cyclists temporarily, the tested measures include existing measures aimed at motorists and development of a new measure aimed at cyclists.

Four different kind of measures have been tested; 1) black portable rumble strips, 2) narrowing of cycle track and lateral displacement of cyclist using delineators, 3) black/yellow portable speed bumps and 4) prototype of a black/yellow rubber mat with rumble effects. Between one and three different settings have been tested for each measure, corresponding to a total of nine different settings. The measures were tested in real traffic at a cycle track with fictitious roadworks but no roadworkers at the site. During the tests, an observer ensured that none of the measures posed a risk to the cyclists.

Based on video recordings, speeds of cyclists have been measured at two short segments; one ahead of the roadworks and one just after the measure. Speeds were also measured in a situation without roadworks to validate that cyclists travel with same speed at the two segments during “normal conditions”. Only speeds of cyclists riding unhindered were measured. Significance of differences of average speed between the two segments were tested with a t-test.

All 9 settings reduce the cyclists’ average speed significantly and the 85-percentile speed as well. But the effectiveness seems to differ. Measure 1 and 3 are most effective. All three settings with measure 1 reduce the average speed by around 3 km/h, corresponding to a reduction of average speed by 12-15%. Two settings using two speed bumps (measure 3) both reduce average speed by 4-5 km/h (21-23%), while the setting using only one speed bump reduces the average speed by around 3 km/h (13%). Measure 2 and 4 only reduce average speed by 1-2 km/h (6-9%).

Portable speed bumps (measure 3) seem to be the most effective measure. The mix of black and yellow colors improve the visibility of the speed bumps compared to measure 1 which may have a positive effect on the speed reduction. Furthermore, the cyclists are awarded with higher comfort if they pass the speed bump with low speeds.