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Name of the publication Extended use of variable speed limits in Finland			
Abstract <p>The aim of this study was to create an extensive estimate of the effects on traffic safety of weather-controlled variable speed limits on the main road network as well as of the costs of building and maintaining such a system.</p> <p>The studied road network was divided into parts of which three different sized networks were created (2100–4300 km). The road segments were specified according to traffic safety and traffic volumes.</p> <p>In order to estimate the impacts of accidents, pre-existing research material on the effects of variable speed limit signs on injury accidents in Finland was complemented. Speed limit systems which use fibre optic or LED signs, base the control on automatic classification of road condition situations, and include variable slippery warning signs appeared to decrease the risk of accidents with injuries by an average of 10 %.</p> <p>The building costs and annual maintaining costs of the variable speed limit system were approximated according to the prices of the year 2004, the building costs for divided roads was estimated to be 80 000 €/km and for undivided roads 34 000 €/km. Because there is no research data available on the traffic impacts of variable speed limits varying with the traffic situation in Finland, the building expenses were allocated separately for a weather and road condition controlled system. The impacts on traffic were estimated by possible speed changes, safety changes and the forth-coming use of the speed limits.</p> <p>On the grounds of the results it seems likely that a weather and road condition controlled system of variable speed limits would be profitable in Finland. The benefit-cost ratio based on direct benefits calculated with the most likely starting values was 1.1–1.9. According to the estimates acquired, the benefit-cost ratios on different sized networks do not differ significantly. But it can be said that it is most profitable to built variable speed limit systems on highly trafficked road segments. The systems should be used according to the same principles round the year, namely taking into account the weather and road conditions and the traffic flow. The control should be based on automated, exact and reliable monitoring and classification of the conditions.</p>			
Keywords Variable speed limit, traffic safety, profitability			
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