

**Nokkala Marko, Schirokoff Anna: : Muuttuvien nopeusrajoitusten kannattavuuden tarkastelu kaksikaistaisella tiellä.** Esimerkkitapaus valtatie 7 (E18) Kotka-Pyhtää. [The profitability of weather controlled speed limits on two-lane road. Case main road 7 (E18) between Kotka -Pyhtää] Helsinki 2001. Finnish Road Administration. Finnra Reports 52/2001 53 p. + app. 11 p. ISSN 1457-9871, ISBN 951-726-801-7, TIEH 3200698.

**Keywords:** weather controlled road, investment calculations, variable speed limit, socio-economic profitability,

## SUMMARY

This report deals with the economic evaluation of variable speed limits on the Kotka-Pyhtää (Main Road 7 / E 18) weather-controlled road. In addition to the problems existing in the traditional cost-benefit analysis used, alternative methods of assessment were also discussed.

The first part of the report analyses the systems monetary profitability. The methodology used was based on previous studies where the weather-controlled motorway, Kotka - Hamina, was used to study the profitability of variable speed limits.

As a result of this analysis, it can be concluded that the economic profitability is not very high . The calculated savings are reduced a lot by increases in travel time. The greatest benefit of the system is its calculated savings due to a lowered accident ratio.

In the second part of this report a sensitivity analysis was carried out to study the profitability of wireless communication as an alternative way for data transfer. These modifications to cost-benefit analysis concerning the changes in variables (monetary values) or alternative technical solutions (communication) will give an idea of how calculated profits would change. The changes in variables should be significant (through not realistic) in order to get profitability at a higher level. On the other hand, increases in traffic volumes and reduced travel speeds can lower accident risk which will increase savings.

The end of this report dealt slightly with risk-adjusted discounting, an approach adopted from the Capital Asset Pricing Model (CAPM). This approach did not notably alter the investment calculations, but it did raise the cost-benefit ratio. In addition, a multi-criteria analyses was briefly mentioned as a means of a project evaluation method from a non-monetary point of view as well.

This study was partially funded from European Union's TEN-T (Trans-European Networks – Transport) budget.