

Assessing hydrological impact of land-use measures on peak discharge and total runoff

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Abstract Climate change may lead to an increase in the frequency of extreme precipitation events and floods as well as changes in frost/thaw cycles. This will have impacts on the performance and life time of road infrastructures. The frequency of road closures and other incidences will probably increase. The aim of this study is to evaluate the effect of simulated land-use measures on the local hydrological response changes of a catchment near a low-lying road. The simulated land-use measures in this paper suggest different measures to reduce the generation of storm runoff on site and its delivery to the stream. The effect of these land-use measures on catchment discharge is dependent on the size and time of storm events.

Key words extreme events; road infrastructure; hydrological model; runoff; land use