

Scour risk assessment at river crossings

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Roca, M.and Whitehouse, R.J.S.

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Abstract:

Transport networks are large infrastructure projects that traverse long tracks of land and normally include many stream crossings. One of the main natural risks to river crossings is scour of the riverbed. Scour may expose the foundations of bridges or other infrastructure, or buried assets, making them vulnerable to failure causing undesirable social, operational and environmental impacts. This paper presents the framework and methods to develop a probabilistic scour risk assessment using fragility curves to account for uncertainty in input variables, prediction methods and performance of structures. Understanding the risks associated with possible movements of the riverbed, both in the vertical and lateral directions, is fundamental to provide an evidence base to define future management actions and strategies. The analysis includes the assessment of existing protection works, such as bed sills, and their impact in reducing the risk of scour.

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