The Observational Method for Scour and the Schoharie Creek Bridge Failure

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ABSTRACT

The observational method for estimating the future scour depth at existing bridges was introduced by Briaud et al. (2009) and Govindasamy (2009). The method utilizes measured scour data and observed or estimated flow parameters at a bridge to evaluate the future scour depth at an existing bridge. It provides more realistic scour risk estimates due to the fact that it utilizes measured data and accounts for time dependent scour depth in clays. Other important features of the method are its ability to recognize and efficiently filter scour depths exceeding foundation allowable values and also account for scour in multilayered soil deposits. The Schoharie Creek bridge failure of 1987 was selected as a case history to illustrate the how the observational method would have identified the bridge as requiring immediate attention if it was used to evaluate the bridge prior to its collapse, hence preventing the serious consequences of the disaster.