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Estimation of Scour Depth Around the Brigde Pier Using Analytical Method

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Abstract: Scour depth is the distance between the original elevation of a riverbed or seabed and the lowest point of erosion caused by flowing water. It's the result of running water's erosive action, which can temporarily or permanently remove material from the channel bed or ground. The overall stability and safety of bridge piers, specifically in rivers or streams where the water flow may scour out the sediment surrounding the pier, can be greatly impacted by scour depth. If a scour gets too deep, the footings might have nothing under to provide them with support and so some settling or tilting of the pier takes place which is not good for the structure. Pier bearing capacity: So, scour decreases the bearing soil less than would otherwise be the case around the pier. Global warming seems to have come with a positive aspect on the structure seemed ill to withstand the lots on the foundation, placing its weight as well as dynamic load of the piers, if gone unchecked sufficiency may lead to real catastrophe. In this project it is decided to analyse and calculate scour depth using empirical equations. The different types of Pier and soil beds will be used to conduct experimentation. For this model is prepared. The effect of the water flow on a soil bed will be observed and by conducting analysis the best possible pier shape will be suggested through this project work.

Keywords: Bridge, Scouring, Peirs, Equilibrium, Soil Erosion.

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