CE 597E Water Resources Engineering Seminar Series

PRELIMINARY ASSESSMENT AND RATING OF STREAM CHANNEL STABILITY NEAR BRIDGES

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The primary cause of bridge failure in the United States is scour and channel instability around the bridge foundations. The ability to assess channel stability in the vicinity of bridges is needed to alert engineers to possible unstable conditions at the bridge foundations, to design stable road crossings, and to mitigate against erosion at those structures. This information is valuable for stream stabilization projects as well, particularly for cases where the reach to be restored includes a bridge. However, a systematic methodology for rapidly assessing channel stability that is applicable at bridges located in the various regions of the country does not currently exist. In this study, an assessment method for the preliminary documentation and rating of channel stability near bridges was developed, based on prior stability assessment methods as well as observations at bridges in 13 physiographic regions of the continental United States. This method provides an assessment of channel stability conditions as they affect bridge foundations. It is intended for a quick assessment of conditions for the purpose of documenting conditions at bridges and for judging whether more extensive geomorphic studies or complete hydraulic and sediment transport analyses are needed to assess the potential for adverse conditions developing at the bridge in the future.

Friday January 28th, 2005
12-1.30pm
202 Hammond Building