US Army Corps of Engineers®
Engineer Research and Development Center

Navigation Systems Research Program

Detection and Evaluation of Scour Protection for Navigation Dams

Problem

Scour upstream and downstream from navigation dam is a common occurrence and the extent varies from project to project. Detection and evaluation of this scour is required to assess repair or replacement needs. Severe scour can reduce the structural integrity of the dam and rehabilitation may be necessary to maintain proper performance. In the past, periodic inspections have been used to assess the need for repair. Often times, these inspections do not provide enough information to adequately assess the extent of scour and the repair and/or rehabilitation requirements.

Research Approach

A method to assess the condition of the existing scour protection that could be used with a risk-based analysis of the life cycle performance for the scour protection would provide valuable data for cost effective project operation and maintenance requirements. The objectives of this research are to: 1) identify the most effective method(s) for determining the condition of the existing scour protection and 2) develop a risk based decision process to assist in developing the type and the timing of the repair and/or rehabilitation requirements needed to insure project performance.

Labs/others involved

CHL, ITL, EL at ERDC and MVD and LRD, are involved in this research effort.

Final Products

Products will be a method to determine the reliability of the scour protection based on the project conditions that can be used with existing risk based analyses and an assessment of available techniques to detect and identify scour. A technical report providing this information will be available at the conclusion of the research.

Point of Contact

John E. Hite, Jr., Engineer Research and Development Center, 3909 Halls Ferry Rd., Vicksburg, MS, 39180

John.E.Hite@erdc.usace.army.mil