

SYNOPSIS OF THE PROBLEM BEING RESEARCHED

Stream channel restoration and relocation represent a substantial cost in road construction. Nationwide, stream restoration efforts have cost at least 1 billion dollars per year since 1990. Although exact figures for Tennessee are lacking, an annual figure in the tens of millions of dollars is a plausible estimate. A substantial part of this cost comes from highway construction budgets. Although stream restoration is commonly represented as a mature engineering technology, there have been only limited efforts to evaluate the long-term success of restoration projects. Open questions include how stable are restored or relocated channels, how much they resemble natural streams, how much habitat of what quality they provide, and the overall cost needed to achieve these results. Restored reaches that appear satisfactory when built may later be buried by sediment, or scoured by channel erosion. There is a need for a review of restoration and relocation projects in Tennessee to improve engineering practice in this field.

PROJECT OBJECTIVES

1. Determine whether selected channel-restoration and channel-relocation projects have met design objectives over the long term, and test recommended techniques for such review.
2. Evaluate overall effectiveness of channel restoration and relocation practices in Tennessee as indicated by the geomorphic stability and habitat diversity of selected representative projects.