

EXECUTIVE SUMMARY

Legend has it that at one time the 109-mile-long Lehigh River boasted historical catches of more than 1,000 fish per person in a single day. Along the East Coast, American shad were among the most abundant anadromous fish found in the river and tributary systems draining to the Atlantic. That was until the 1830's when run-of-the-river dams were erected along the river, creating barriers that the fish couldn't overcome. KCI worked with project partners to evaluate fish passage alternatives that would help bring American shad back to the Lehigh River. A feasibility study examined multiple alternatives including complete removal of the dams, removing only portions both horizontally and vertically, and building a ramp or step-like structure to provide a gradual increase in water elevation to facilitate passage over the dam.

The team considered the advantages and disadvantages of alternatives, along with

estimated costs for implementation and maintenance. Each option posed significant engineering and environmental challenges, including altering scenic views, affecting the adjacent historic canal systems, the materials and methodologies used in constructing the existing dams, and potentially disrupting existing land uses. Innovative solutions were identified and investigated to address complex issues like interrupting the water source for the historic Lehigh and Delaware canals and protecting upstream infrastructure. The results of the study provided valuable information including potential impacts, benefits, and costs associated with augmentation or removal of each of these dams, so that an ultimate technical decision about the future of these structures can be made by the dam owners.

