



Fact Sheet

US Army Corps of Engineers
U.S. Army Engineer Research and Development Center

January 2004

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Lock Approach Guidance

Purpose: To develop guidance in lock approaches. This will include the evaluation of guard walls and outdraft, and the effects of submergence and draft on navigability in lock approaches.

Background: Guard walls, located in the upper lock approach, protect against tows being drawn towards the navigation dam during project discharges. The performance of these guard walls drastically impacts the functional efficiency of any given lock. Poor navigation conditions in the lock approaches produce traffic delays and safety concerns. The costs of guard walls are significant in that they are estimated to be one-third of the overall project cost. Current hydraulic design guidance lacks detailed information to provide engineers with the proper tools for determining appropriate guard wall geometry.



Facts: This research is providing additional guidance for the hydraulic design of lock guard walls. A combination of numerical- and physical-model experiments has been conducted with numerous guard wall configurations. These results have been combined to determine hydraulic considerations for the basic layout of guard walls. Optimum design ratios, which produce the best navigation conditions for the flow and channel conditions tested are being quantified. This design guidance will be provided to the field in a technical report and a workshop to be held in FY 04.

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