



Rehab of a 1830s Canal Dam

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40 Acre Dam is a 2.1-mile long Class III Dam in Auglaize County, Ohio that impounds a section of the historic Miami and Erie Canal; it is owned by the Ohio Department of Natural Resources (ODNR). The dam features a 35' principal spillway that is in-line with the canal. There is an auxiliary spillway that's 9.5' wide that discharges into the St. Mary's River, which meanders along the downstream side of the dam. The dam was constructed as part of the Canal in the early 1800's. The concrete auxiliary spillway was severely deteriorated and the embankment was in poor condition with steep slopes, tree growth, an uneven crest, and animal burrows. A Hydrologic and Hydraulic study indicated that the dam was not capable of safely passing the design flood event. In 2023, emergency repairs were made at several locations on the upstream slope of the embankment. This project involved the evaluation of interim risk reduction measures (IRRM) to address the immediate issues, with future plans to bring the dam into compliance with current standards.

Challenges for this project include:

- Developing a prioritization plan, considering that 40 Acre is a Class III (low hazard) dam, and is part of the 50-mile long Miami and Erie Canal system.
- Developing a bid package that would draw interest from mid-size Contractors.
- Logistics for access, with repairs being completed over a 2-mile long embankment that was barely one lane over most of the length.
- The historic nature of the Canal System and the dam itself. This increased the unknowns and potential construction issues while requiring additional permitting efforts.

Small scale projects like 40 Acre Dam are not necessarily easy. They have a different array of problems such as budget constraints, less attention from regulators that have to prioritize the work throughout the state, and less interest from contractors when projects go out to bid. The designer needs to think outside the box with innovative designs and creative bid techniques that make valued improvements for the clients and appealing projects for contractors.