

#10 – Design Evaluation

10 a)

Preferred Alternative

Please see Figure 1 and attached booklet regarding preferred design. After many months of revisions, this is the preferred design of the Army Corps of Engineers and the Ohio Dept. of Natural Resources. It involves the construction of seven (7) 50' long armor stone groins.

Minimal Degradation Alternative

The Minimal Alternative consists of the construction of five 50' long groins. Please see Figure 2 for details. This alternative will not provide adequate shoreline and erosion protection of the Park and its infrastructure.

Non-Degradation Alternative

This alternative would be to construct nothing and allow the hill to erode.

10b) There are no anticipated mid or long term negative impacts on water quality associated with the Preferred or Minimal Degradation Alternatives. The reduced erosion from stabilization will help maintain water quality. There will be short term increases in turbidity during groin construction and sand prefill activities. The proposed groins will enhance fish habitats. The project has been reviewed by Ohio Department of Natural Resources, which actually recommended the use of groins. The project will have no impact on commercial or sport fishing nor will it reduce the function the aquatic community. The Non-Degradation alternative will result in continued soil erosion into the lake and no creation of fish habitat.

10c) The Preferred or Minimal Degradation Alternatives are technically feasible and materials for construction are readily available. Note that the U.S. Army Corps of Engineers has issued a Provisional Permit. These Alternatives represent the most reasonable and cost effective methods of reducing hillside erosion. This project is projected to have a 30 year useful life before significant maintenance repairs may be required. Both the U.S. Army Corps of Engineers and the Ohio Department of Natural Resources have indicated that this proposal is a reliable and effective approach.

The projected cost of the Preferred Alternative is \$480,000, while the cost of the Minimal Degradation Alternative is \$340,000.

The Non-Degradation Alternative is technically feasible and no materials would be required, however, there would be no shore line protection, no reduction of erosion into the lake, no submerged land lease, and no fish habitats created.

10d) N/A

10e) There are no known environmental or recreational projects planned for the immediate area. Lake Metroparks is proposing shore based recreation enhancements to the east. The proposed project is projected to have a positive impact on those activities.

10f) No water pollution controls are planned for either the Preferred or Minimal Degradation Alternatives. The proposed installation of rock will not pollute the lake. The Non-Degradation Alternative will result in no change of conditions, however erosion into the lake will continue to occur.

10g) None of the Alternatives will have an impact on human health. The Preferred and Minimal Degradation Alternatives will have a positive impact on water quality and the value of the lake by reducing erosion and providing fish habitats. Both of these alternatives will also provide submerged land leases to the Ohio Department of Natural Resources. The Non-Degradation Alternative will not provide fish habitats and there will be no reduction in shore erosion and no submerged land lease for ODNR.

10h) The Preferred and Minimal Degradation Alternatives will provide temporary construction jobs and will generate submerged land lease revenues for the Ohio Department of Natural Resources to fund other projects. These alternatives will also create a beach area which can be enjoyed by the residents of Perry Township. The Non-Degradation Alternative will create no jobs and no beach and therefore no social or economic enhancements.

10i) There are no social or economic benefits that will be lost as a result of the Preferred or Minimal Degradation Alternatives. As noted above, the Non-Degradation Alternative will not create the social benefits of the beach.

10j) There are no know mid or long term negative environmental impacts on water quality, aquatic life, wildlife, or threatened or endangered species that would result from installation of the Preferred or Minimal Degradation Alternatives. Those Alternatives will actually resulted in enhanced fish habitats.

10k) Mitigation for the Preferred and Minimal Degradation Alternative will consist of an area planted with Native Ohio Vegetation, such as American Beach Grass (*Ammophila breviligulata*) and Inland Beach Pea (*Lathyrus japonicas*). This area will be located between groin 1 and groin 3 from elevation 574' to elevation 790' for an approximate total of 9,000 ft².