REPORT ON INSPECTION OF UPPER YAPHANK LAKE DAM

NOVEMBER 30, 2007

1) The dam consists of an earth fill dam with bulkheading on the upstream side impounding Upper Yaphank Lake (see photo 9). Generally, the bulkhead is in good condition and does not need replacement except for about four feet on the east side of the spillway. The dam is actually about two hundred feet wide with Yaphank-Middle Island Road running along the dam. A box culvert passes underneath Yaphank-Middle Island Road directing the overflow from the spillway southward towards Lower Yaphank Lake.
2) The concrete bulkhead on the lake west of the spillway is in good condition as is the west wall of the spill way (see photo 9).
3) The spillway consists of a notch in the concrete wall consisting of a concrete crest which appears in good condition. The spillway is approximately six feet wide and the notch is 25 inches deep. At the time of inspection the water level above the top of the crest was about 4-inches. We estimate the flow through the spillway to be between 3.75 and 4.6 cu.ft./sec.
4) The east side of the spillway is wooden bulkhead. About four feet of the bulkhead shows some deterioration with water passing through and flowing down spillway with erosion behind the bulkhead. This can be corrected by backfilling the bulkhead in this area after repairs to the concrete wall on the east side of the spillway.
5) The east wall of the spillway is deteriorated with cracking and the wall leaning slightly inward (see photos 6-8). The wall is undermined at the bottom from water flow, although this area was not submerged during the inspection. This wall should be replaced by pouring a concrete wall adjacent to existing wall. The new wall should be constructed of reinforced concrete using the existing wall as a form on one side and tied back either into the existing wall or the soil behind the wall. The bottom of the wall can sit on the existing stone base in the spillway or a new foundation for the wall can be poured. The new wall would be about 5'H x 6"W x 15'L for a total of less than 1.5 yards of concrete. The cost of this is typically about $5,000.
6) The existing bypass appears functional. The flange can be removed to bypass the spillway. The head wall for the bypass shows cracking but is stable (see photo 1).
7) The drop from the lake to the stream level is approximately six feet. At the time of the inspection the freeboard on the wooden bulkhead was 18 inches and on the concrete bulkhead was 21inches.

8) Bulkheading at the box culvert is in excellent condition and conservatively designed (see photos 4-5).

PHOTO #1

PHOTO #2

PHOTO #3

PHOTO #4

PHOTO #5

PHOTO #6

PHOTO #7

PHOTO #8

PHOTO #9