

Tabb Lakes

Bathymetry and Sediment Report

June, 2015

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LAKE MANAGEMENT

Restoring Balance. Enhancing Beauty.

The attached figures depict the results of the bathymetric study performed at Tabb Lakes in York County Virginia in June of 2015. The data were collected and modeled to provide a contour map, a 3-Dimensional depth representation map, and a sediment map. The data were used to provide an estimate of the current overall storage volume and amount of accumulated soft sediment of the 2 waterbodies in the community.

The Contour map for each waterbody shows the configuration and current depth contours of the lake or pond. The 3-Dimensional depth representation provides shaded gradations that are helpful for visualizing the contours. The darker the blue color the deeper the water is in that area of the lake. The combined waterbodies within the community measures an area of 10.3 surface acres of water.

The sediment map shows the locations and magnitude of unconsolidated sediment depth measurements. The unconsolidated sediment layer is comprised of soil particles and organic materials that have accumulated on the bottom of the pond, which remain penetrable by a manual depth sampling instrument.

Lake 1

4,190 depth readings were collected for this Lake. The Lake has good water depth with a maximum depth of 14.8 feet and an average depth of 6.7 feet. The pond measures an area of 5.2 acres with a current storage volume of 33.9 acre-feet or 11,642,697 gallons. Sediment depth measurements were taken throughout the entire water body. The estimated accumulated soft sediment volume is 6,040 cubic yards or an average of 0.7 feet across the whole lake. The thickest measured sediment depth was 4.6 feet. This pond has good water depth but has accumulated a moderate amount of soft sediment across the whole lake. There are two areas of concern with accumulated sediment within Lake 1. The inlet portion located at the southern end of the lake where water is being received from Lake 2 has a very thick amount of accumulated organic muck and leaf debris. The outlet portion of the lake located at the northern end of the lake has also experienced an accumulation of organic debris build up. These areas of the lake will likely need sediment and organic debris removed to ensure proper water flow. If these two areas were separated from the lake totally they would both be considered in poor health.

Lake 2

7,804 depth readings were collected for this lake. The lake has poor water depth with a maximum depth of 6.8 feet and an average depth of 2.9 feet. The pond measures an area of 5.1 Acres with a current storage volume of 14.8 acre-feet or 4,831,304 gallons. Sediment depth measurements were taken throughout the entire water body. The estimated accumulated soft sediment volume is 6,690 cubic yards or an average of 0.8 feet across the whole lake. The thickest measured sediment depth was 3.7 feet. This pond has poor water depth and a moderate amount of soft sediment across the whole lake. There are portions of the lake where water depth is a concern. In previous lake



reports it has been noted that the lake was built to shallow and never excavated to a proper depth from the beginning.

In general, with respect to the bathymetric data, Lake 1 is in good shape but Lake 2 has depth issues. A pond is considered to have good water depth when its average is greater than 4 feet. The amount of sediment in each lake is about the same. Lake 1 has enough depth to handle the current accumulated sediment while Lake 2 appears to have started as a shallower lake. Sediment accumulation can be problematic both because the silt is a source of nutrients and because the shallower depths caused by sedimentation provide good habitat for nuisance vegetation and algae growth. Portions of each lake have an excess amount of accumulated sediment and organic debris build up. These are areas of concern and the removal of the excess material would be recommended. When and whether or not to dredge a lake is a decision based on the discretion of the lake owners. A lake can function properly to mediate peak storm flows regardless of the depth. However, as it becomes shallower over time, a pond may become choked with algae and aquatic weeds, and may not support an abundant fish population.

