



March 17, 2007

To: Columbia Association Board of Directors

From: Dennis Mattey

Thru: Maggie Brown

Re: Hobbit's Glen Dam

The Hobbit's Glen Golf Course was constructed in 1967 and included two ponds. The smaller of the two ponds is adjacent to green number 2 and was installed for aesthetic reasons. This pond is currently heavily silted in and staff is moving forward with plans to convert this pond into a wetland habitat using native plantings. The larger of the two ponds overlooks hole number 12 and was installed for irrigation as well as aesthetic reasons. The pond on hole number 12 was constructed with an 20 foot earthen dam and is recharged as needed by permitted authority from the state to pull water from the adjacent Little Patuxent River. The 20 foot earthen dam places the pond under the jurisdiction of the state dam officials and assigns hazard categories based on proximity to roadways, bridges and other structures. There are three hazard categories; low, significant and high, each hazard category places different construction requirements on the dam. The Hobbit's Glen golf course was considered a low hazard dam based on the risk assessment during the construction process.

During the summer of 2001 the Hobbit's Glen golf course superintendent noticed seepage in the lower 1/2 of the dam on hole number 12. The golf course superintendent retained the services of a civil engineer who recommended consulting local and state dam officials. That meeting with local and state dam officials was held shortly thereafter. Budget estimates were developed using preliminary recommendations from the state dam agency. At that time the dam repairs were limited to the installation of a sand diaphragm and work on the overflow assembly at an estimated cost of approximately \$150,000 . Plans were submitted to the state for preliminary review during which time the Columbia Association was asked to re-calculate the hazard assessment for the dam. When the hazard assessment rating was re-calculated, the engineer discovered that under the worst case scenario water flooded over top of the bridge on Manorstone Lane (the road into the Forest Glen community). Manorstone Lane was constructed during the last ten years, well after the Hobbit's Glen Golf Course was in operation.

The hazard assessment is based on a worst case failure of the dam and looks at the resultant impacts to roadways, bridges and structures (both residential and commercial). A worst case failure of the dam would overtop the bridge on Manorstone Lane with enough water and velocity high enough to preclude life safety equipment from safely transversing the bridge. At that time the state requested and the Columbia Association agreed to lower the pond pool elevation to reduce the amount of water in the pond and the hazard associated with a worst case dam failure.

Placing the dam into a high hazard category significantly affected the allowable construction methods for the dam repairs. As a low hazard dam the repairs were limited to removing soil in the immediate vicinity of the seepage and the installation of a drainage system. Increasing the hazard level to high would require almost the completion reconstruction of the dam. Removing the pond was not considered an option as this pond contains the primary source of irrigation water. During the next two years staff pursued several alternatives including a permanent reduction in the pond pool elevation, reducing the height of the dam, increasing the size of the overflow riser structure, but ultimately all alternatives fell short of state mandated requirements. Conceptual estimates for state imposed construction methods increased the estimated cost to approximately one million dollars.

At this time staff is maintaining state mandated water levels in the pond pending further evaluation and value engineering.