

A Brief History of the Water Level of Lake Minterwood

In the early days of the Lake Minterwood development the lake was fed by two wells (which are now owned by Washington Water Co.). The Beach Club elected to negotiate a water-rights agreement with the developer and in 1985 a third well was drilled for LMBC to be dedicated to maintaining the lake level. The lake level is now about 37 inches below the design level (top of the spillway). We would like it higher, but our water rights and ability to pump are limited and it is usually worst in a dry August.

Seepage under the beach area has long been suspected to add to the evaporation problem. Several repair projects were attempted over the decades, but the lake still leaks. Estimates to fully plug the leak go well into six figures, if it is indeed under the beach area (and not elsewhere). We have been seeking a lower cost solution. A leak of this kind would increase with the water pressure. And as the lake level varies it gives us a handle on how far below the water level we should look.

Presently we estimate the leak accounts for 60% of the pump flow at the water fall, the rest is due to effects like evaporation. In order to help locate the depth of the leak the Board of Trustees authorized retired scientists Robin Harvey and Gary Klauminzer to install a weather station to monitor the local weather (air temperature, rainfall, relative humidity, barometric pressure, wind speed and direction) as well as lake level and temperature. The system was installed in 2012 and has been running continuously since then, with results shown on the web site along with the lake level. In parallel, Robin developed a complex physical model of the lake level. This model applies weather conditions for use to test for hypothetical leaks.

Robin has analyzed the data extensively and determined that the mean depth of the seepage seems in winter to be at about 61 inches below the design level, i.e. relatively shallow and hence at least half runs somewhere under the shoreline. In recent years the Lake Committee dug some test holes in the beach area under the supervision of a professional soils engineer. A slow leak through a sandy gravel "lens" was found near the pavilion area at about the expected depth (not the main leak however). We think that seepage was reduced by putting the material back in a different order. The process continues, and more factors come into play. The Lake Committee is committed to solving this problem, and if you want more details, contact Robin Harvey at rjharvey@centurytel.net.