

**Water, water, but not everywhere:
A tale of three towns and two ponds
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In recent weeks, letters in the Acton-Boxborough Beacon called attention to the vulnerability of the ground water wells that are sole source of water for 95% of Acton's residents and businesses. Those letters made me wonder why, with Nagog Pond sitting right here, partially within our town's borders, Acton has never availed itself of Nagog's abundant clean water. For the answer to this puzzle, I went back in history to the 1870's, not to Nagog Pond and Acton, but to Sandy Pond and the Town of Lincoln. Known also as "Flint's Pond", Sandy Pond lies entirely inside Lincoln, and like Nagog it enjoys special status as one of the Commonwealth's Great Ponds.

A Solomonic legislative solution to sharing a resource. In 1872 our Legislature decided that both Concord and Lincoln could both draw their water from Sandy Pond, but added a caveat: If there were an emergency, Lincoln's use of the water would have priority over Concord's. This arrangement worked well for about a decade, with the two neighboring towns sharing water from Sandy Pond. Then a prolonged severe drought hit our area. Seeing that Sandy Pond's water level was seriously reduced, and realizing that its ability to draw on Sandy Pond might be curtailed in the future, Concord had the foresight to look around for alternatives. Its eye fell on the billion gallons or so that were sitting in Nagog Pond. After all, Nagog's nearest shore is only a short distance from Concord. Moreover, the pond's elevation guaranteed a reliable and inexpensive source — gravity— to carry Nagog's water those few miles down to Concord.

Repurposing that Solomonic solution. In 1884, Concord persuaded our Legislature to grant the town rights to draw water from Nagog, with a proviso like the one made in 1872 when the sharing arrangement for Sandy Pond was set up: In an emergency, Acton's and Littleton's use of Nagog water would have priority over Concord's. But it took more than twenty years before Concord could cash on in this largesse from the Legislature. During those years, Concord used eminent domain and cash payments to take land around the Pond. This taking allowed Concord to put the needed intake pipe into Nagog Pond. Incidentally, the historical record suggests that most of the affected Acton landowners and people who lived on the land that Concord wanted, just acquiesced to Concord's offer; most did not even bother to get their land appraised. Sadly, it seems also that Acton Town officials at that time made little effort to protect residents' rights in their dealings with the larger town that was determined to take their land.

Acton looks for water. In the aftermath of the Law of 1884, Acton had figure out how its growing population could transition to a modern water supply and away from reliance on uncoordinated private wells, which required backbreaking effort to get water, particularly during Acton's bitter cold winters. A committee was formed to explore Acton's options. One option considered was the obvious one: tapping Nagog Pond, thereby beating Concord to the punch in accessing that plentiful source. That option was rejected when engineers reported it would be too expensive and difficult to run pipes from Nagog through Acton's rocky substrate to a point (Great Hill) from which gravity could feed wa-

ter to townspeople. With Nagog ruled out, the engineers proposed the alternative of a system of centrally managed groundwater wells and delivery pipes. In 1895, Acton Town meeting balked at the expense of that solution, and little was done to move away from residents' dependence upon individual private wells until the Acton Water District was formed many years later, in 1912.

Concord wants to have Sandy Pond and Nagog Pond, too. Let's come back for a moment to Lincoln's Sandy Pond because its fate in the early 20th Century holds important lessons for Acton's current circumstances. Needless to say, weather and climate change over time. And an increasing population can stress a town's water supply. A long and serious drought hit our region in the first decade of the last century. That drought undid the water sharing arrangement that the Legislature had so carefully crafted in 1872 for Concord and Lincoln. The level of water in Sandy Pond dropped dramatically, to a level that reportedly had not been seen in living memory. Although Concord was preparing to tap Nagog Pond, it still wanted the freedom to continue to draw water from Sandy Pond, particularly for delivery to residents living near the Lincoln border. The significantly reduced water level in Sandy Pond alarmed Lincoln, which decided to assert the priority rights that the Legislature had given to it thirty or forty years before. But how to assert those rights? The 1872 Legislation failed to make it clear how Lincoln could do that, other than by requesting that Concord stop or at least curtail its use of water from Sandy Pond. But merely asking Concord for that relief had no effect; Concord was adamant.

Droughts have long-lasting consequences. So in 1907, Lincoln was forced to petition the Legislature for help. In turn, the Legislature asked the State Board of Health for advice. Although the Board recommended no action at that time, it did acknowledge a long-term threat to the water supply from Sandy Pond. It noted that if a drought exposed some of a pond's shoreline, organic growth on the newly-exposed shore and on the bottom of the pond would be encouraged. The State Board of Health warned that this new growth was "likely to be detrimental to [water] quality when it again rises and overflows these shallow areas." The striking message is that a severe drought can have long-lasting, possibly permanent impact on water quality. In other words, a drought's impact can continue well after "normal" levels of rainfall have returned.

The Legislature tries to mediate. In 1911, Legislature came up with a solution to the impasse between the two towns. From then on, each town was required to monitor and report how much water it took from Sandy Pond. Importantly, Concord's right to draw from Sandy Pond was to be adjusted in accord with the level of water in the pond; when the level fell, Concord was allowed to draw less, or even no water from Sandy pond. This arrangement was not entirely satisfactory to Concord. For decades later, Concord continued to ask that the Legislature rescind its ruling, so that Concord would be freed from restriction. Fortunately for Lincoln, the Legislature did not accede to these repeated requests, and today Lincoln has sole use of water from Sandy Pond.

What history teaches. This watery history of three towns, two ponds, several state laws, and many decades of wrangling, holds some important lessons for Acton, for to-

day. First, as the State Board of Health warned many years ago, when drought exposes a pond's shoreline, that exposure can have permanent negative effects on the pond's water quality. Although our current drought is the worst in at least a decade, it is neither as severe, nor as prolonged (hopefully) as the one our area experienced in the first ten years of the 20th Century, long time residents of Acton have said that Nagog Pond's water level is far down, to levels they have not seen in decades. This drop in level has exposed more of Nagog Pond's shoreline, promoting organic growth that could continue to impact water quality after the drought breaks, which we all hope is very soon. At the same time, Concord has announced it plans to increase the amount of water it draws from Nagog in order to rest its wells. It has said it might even draw all of its water from the pond. If that happened during a severe drought, the water level of the pond could be further compromised, exposing even more shoreline and threatening the longterm quality of Nagog's precious water and the habitat that Nagog Pond provides to many species.

Time to revisit Nagog? Some residents, seeing possible threats to Acton's groundwater supply, have argued that our town should assert its priority rights to Nagog water, or at least initiate the process. The historical record shows that if Acton wanted to take that step, actually making it happen would be far more difficult than merely turning on a spigot. The legislation on which Acton's rights are based, the Law of 1884, fails to specify how those rights could be exercised. The lesson of Sandy Pond, and the decades' long wrangling between Concord and Lincoln, suggests that merely asking Concord to share Nagog water might not be effective. Acton might have to endure decades of delay and litigation in order to exercise the rights that the Legislature gave us in 1884. If Acton ever wanted to exercise its right to draw water from Nagog Pond, the time to start serious planning for that eventuality might be at hand. In June 2016, editorials in the Acton-Boxborough Beacon and the Concord Journal asked readers, "What natural resource is more precious than water?" History and common sense give the answer.

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