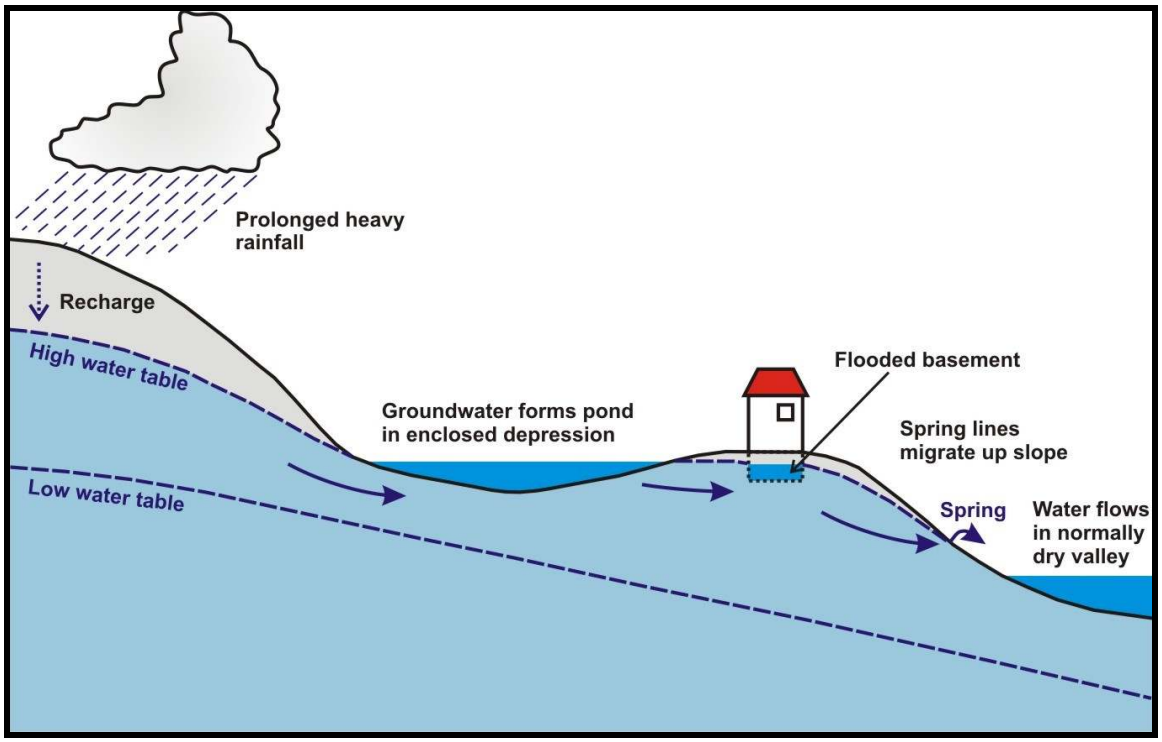
GROUNDWATER FLOODING

There are town wide discussions about sump pump systems operating more than normal, pumping into streets, onto neighboring lawns; *and,* what the heck is going on at the Bark Park!! Here is an explanation about what we are experiencing.

This past year is recognized locally as one of the wettest on record. Thankfully, the Township did not experience any appreciable flooding. So, where did all the water go? In general, the answer is found in the frequency and duration of this year's pattern of rain.

Groundwater flooding (aka high water table) happens after an unusually high frequency of rain events. Frequent storms allow more rainwater than usual to soak into the ground from the surface. Simply stated, several small storms over a fixed period of time generates more groundwater than one larger storm producing the same amount of rain (i.e. 5 one-inch storms produce more groundwater than one five-inch storm).

As rainwater soaks into the ground, the water table rises, ultimately pushing groundwater levels above basement floors and occasionally above ground. Since groundwater moves slowly, basement flooding can come as a surprise, especially when it occurs several days after it stops raining. This year, the Township experienced several moderate storms, nearly weekly, over the past four or five months causing the water table to gradually rise to near record levels. Accordingly, a significant number of homes find their sump pumps running constantly, or running when they typically would be idle.



The above diagram includes two dashed blue lines. The lower line represents a low or average seasonal water table. The upper blue line represents an unusually high water table.

It's the upper blue line that provides insight to our current situation. Notice the dwelling, even if on a hill, can experience water in the basement. As groundwater rises above the basement floor level, sump pumps start doing their job. If the water table continues to rise, more and more sump systems become active and/or operate for longer periods of time.

The situation at the Bark Park is a bit more difficult to understand. Excessive groundwater from the adjacent hill is creating upward water pressure at the foot of the hill (Foothills Park). Looking at the above diagram, you will notice a pond described as 'Groundwater forms pond in enclosed depression'. Water flows underground much slower than on the surface. Over time, water pressure from the higher groundwater is filling Foothills Pond. Unfortunately, there is no outlet for the pond. Accordingly, the pond will continue to rise until groundwater levels return to seasonal norms. Based on average rainfall, the pond will not return to "normal" levels until sometime in July.

As we enter the winter freeze, please be cognizant of the problems facing many of our neighbors. Dozens of residents are protecting their family and their home by pumping water out of their basements. Unfortunately the Township is so flat that most properties have very few alternatives for pump discharge. While pumping into the street is allowed, the homeowner doing the pumping is responsible to keep sidewalks and streets free of ice and any other related hazard.

We need everyone to work together to keep our sidewalks and streets safe. There is no short term solution to this unexpected phenomenon. The DPW will salt the streets, but cannot keep up with icing during extended periods of freezing weather. Please respect your neighbor's predicament and help if you can. For further information, please feel free to contact the engineering office at (973) 835-5700 x189.