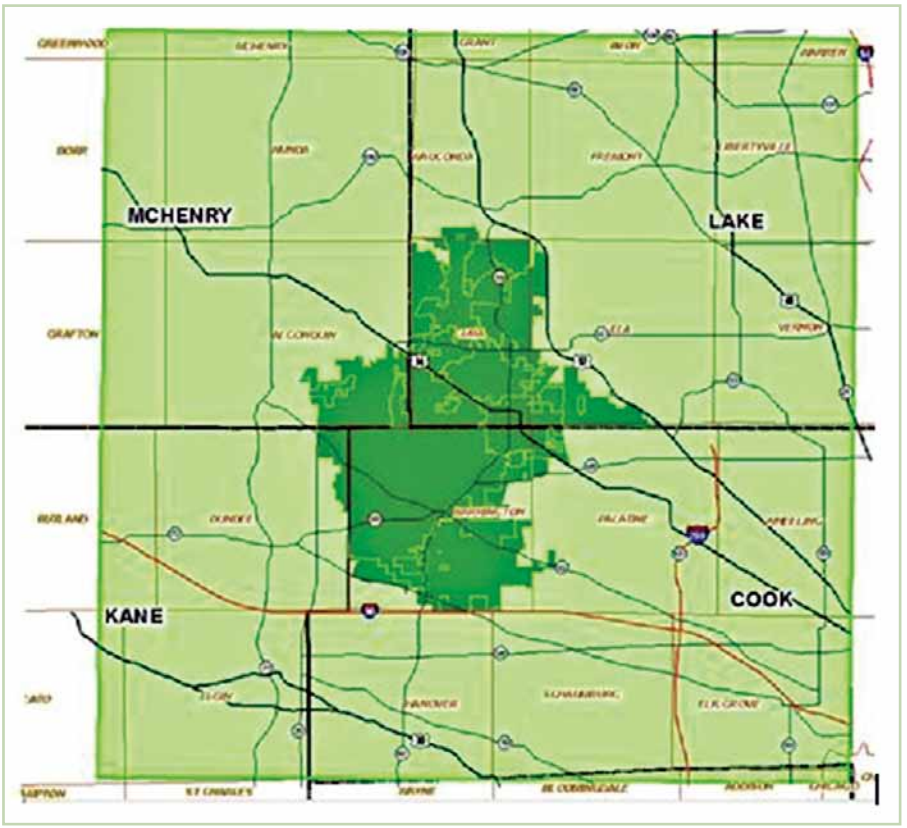
It's Time for Your Well Visit

Don't miss the opportunity to learn more about your supply of water and have your private well tested this November.



This 600-square mile study area is shown in light green. The BACOG footprint, crossing four counties, is shown in dark green.

When it comes to our water supply, we all drink out of the "same cup" – water sourced through an aquifer below our feet. Where water is municipally-supplied, the villages have the responsibility for providing clean water to their citizens. The Illinois Environmental Protection Agency requires municipalities to monitor, test, and report water quality. These annual water quality reports are shared with the public and can usually be found on the municipality's website.

If you live in Barrington Hills, Lake Barrington, North Barrington, most of South Barrington, or Deer Park, and have your own well – you are responsible to have your well water checked. If you live in Barrington, Tower Lakes, Wynstone (North Barrington), the Woods of South Barrington, or a major subdivision with its own well, you have help through your community. But wherever you live in the greater Barrington area, your water comes from aquifers beneath your feet. This is true whether you drink community water, or have your own well.

We (QB, below) visited with Janet Agnoletti (JA), executive director of the Barrington Area Council of Governments (BACOG), to learn more about our water supply, and how to schedule a well water check-up.

LEVEL- 1

PRIVATE WELL WATER TESTING AND EXPERT PRESENTATION IN NOVEMBER

Right now, if you have a private well, it's your turn to test. Stop by a village or township office to purchase your test kit, and plan for a drop-off on Nov. 18. That evening there is also a presentation as noted below.

Test Kit Pick-Up: Nov. 10-13

Location: Your village or township office, during regular office hours. $10 per kit, a reduced fee. No credit cards please. Only cash or checks are accepted. Checks payable to "Lake County Health Department".

Test Kit Drop-Off: Nov. 18

3:30 p.m. – 7 p.m.
The Garlands of Barrington
1000 Garlands Lane, Barrington

Presentation: Nov. 18 – 6 p.m.

Drop off your sample at 6 p.m. on Nov. 18 at The Garlands of Barrington, and stay for a presentation by a water expert. Topic to be announced soon.

For a list of the BACOG member government locations selling test kits and additional information about all three levels of water testing, visit www.bacog.org or call 847-381-7871.

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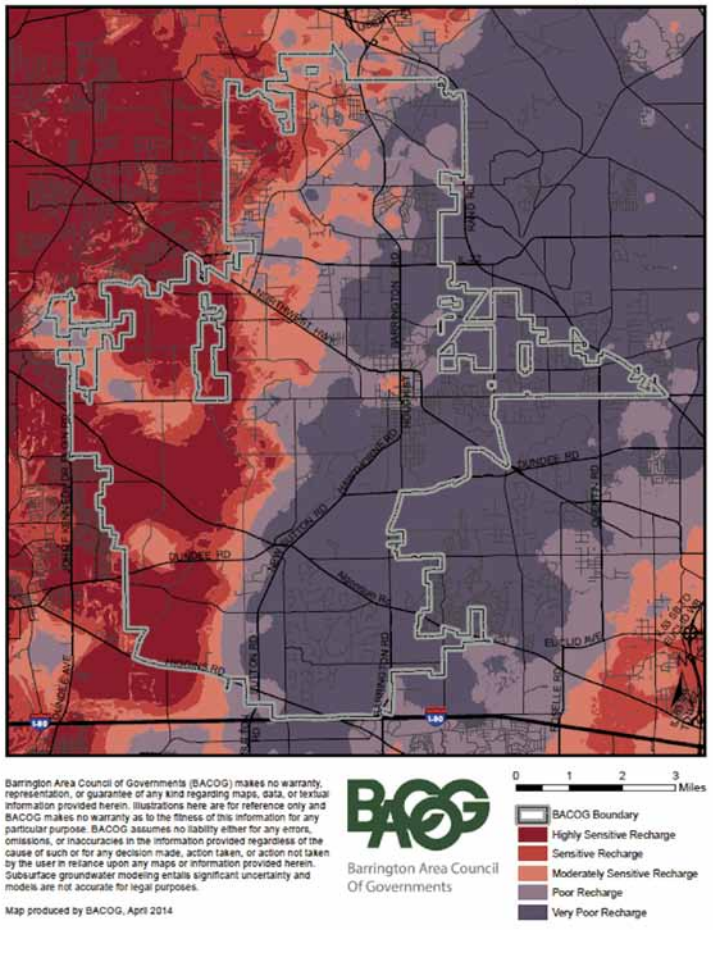
QB: *Before we dive into the water topic, will you explain what BACOG is, and why it is leading the water testing efforts?*

JA: BACOG is considered a "quasi-governmental" agency because it is supported by its government members, but operates independently. It is funded by the nine Barrington area village and township governments. BACOG was formed in 1970 to develop regional planning and environmental protection policies and to foster intergovernmental cooperation. BACOG, at the behest of member villages and townships, can take on studies and research that no one community can do on its own. Water is one of those critical regional issues, since aquifer-sourced water means, in the words of Gene Dawson, Barrington Township Supervisor, "We all wind up drinking from the same cup."

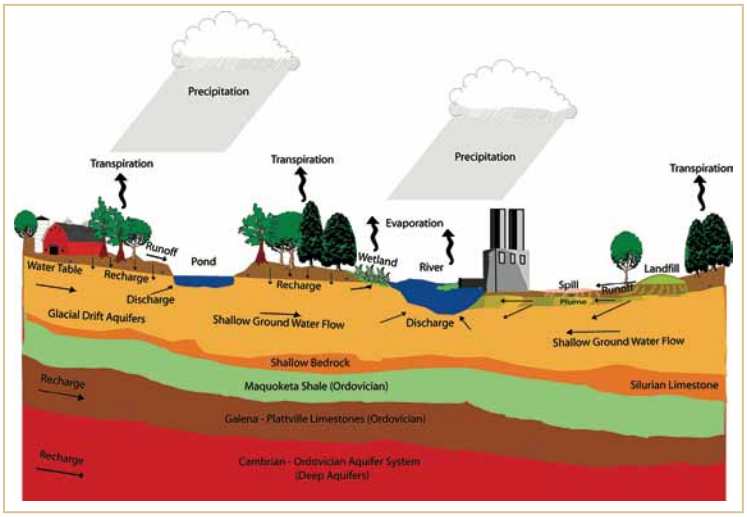


QB: *We always hear about aquifers and their importance. What exactly are they?*

JA: Aquifers are saturated, underground layers of soil or sediment (usually sand or gravel), or permeable rock that yields water. The pore spaces between soil or rock materials in aquifers are filled with water, so that water flows through these materials and can be pumped out of them. Sand, gravel, and limestone in our area have a high level of porosity (more pore space) and make great aquifers for domestic and community wells.

QB: *How does a well work with respect to its aquifer?*

JA: A good well that supplies a plentiful, steady supply of water to a home or community is dependent on locating a good aquifer. Once the well column is drilled into that aquifer, a pump is lowered into the well and power is used to suck the water out. Just how easily water can flow through an aquifer determines how easily a well can pump water. This is called permeability. Aquifer materials have high permeability, and water readily flows between sand and gravel particles, for example, to a well. As soil particles get smaller, it's harder and harder for water to move between them.



QB: *What about areas that have clay?*

JA: Clays have high porosity (they can trap lots of water - up to 50 percent water by volume), but because the clay particles are small, it's really hard for the water to move around the particles to a well. Clays have high porosity but low permeability, and so are not good aquifers.

QB: *You've said the recharge aspect of replenishing aquifers is critically important. Can you explain how the recharge works?*

JA: An important map (on left) produced by a study identified which areas are critical for groundwater recharge of the aquifers. These areas tell us where rainwater, snow melt, and storm water readily enter the ground and percolate rapidly (or slowly) down to the shallow aquifers. In areas of highly sensitive recharge (dark red in model), water travel time is measured in days. The percent of precipitation that reaches the groundwater in the highly sensitive recharge areas is estimated at nearly 50 percent. By contrast, in a very poor recharge area (dark purple area in model), water's travel time from the surface to the aquifers is estimated at 40 to hundreds of years, or more. The amount of precipitation reaching groundwater is estimated at only 6 percent.

QB: *Where is groundwater runoff most concerning within the model?*

JA: The highly sensitive recharge areas are especially important, as the runoff waters percolate to the aquifer very quickly. Given water's capabilities as a carrier or solvent, this also means that the aquifers underlying those recharge

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A BACOG staff manually measures a monitoring well in July 2014.

areas are more sensitive to pollution, and contaminants can reach the aquifer more easily than in other areas. This groundwater model, maps, and technical information provides support to village and township staff and engineers for planning and development decisions.

QB: *Everyone wants to know if they have good water. Is this where testing comes into play?*

JA: Since water is underground, it is a challenge to know its condition and how much is there. Well owners know that "pure" water does not exist in nature – all natural water contains some dissolved gases and minerals and is likely to contain some microbial organisms, most of which are harmless. But there are exceptions, and that is why private well owners should annually test their water.

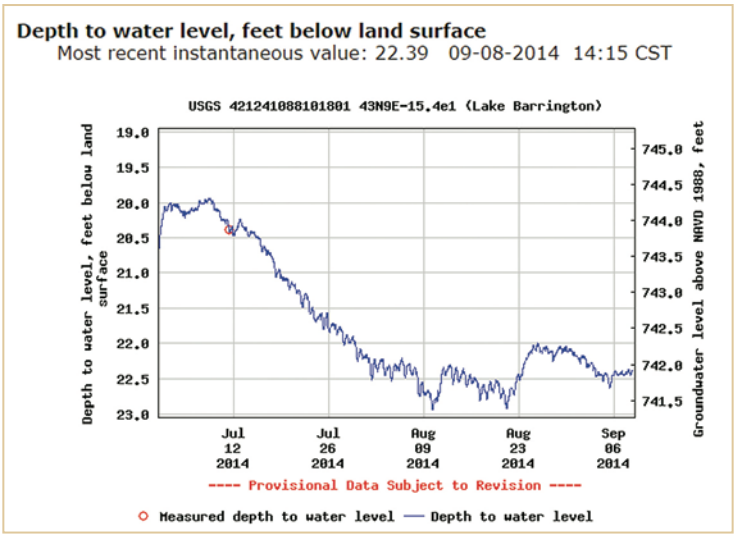
QB: *Please explain how BACOG is helping with the testing process.*

JA: BACOG offers annual private well water testing events, generally in the fall. There are three testing levels:

- The BACOG Level 1 test looks for coliform bacteria and nitrates, especially such harmful bacteria as E. coli. Each test kit is offered at a reduced rate of $10 and is analyzed by BACOG's partner, the Lake County Health Department. The results are sent directly to the well owner by Lake County.
- Level 2 testing analyzes other water quality characteristics, such as sodium, fluoride, chloride, hardness, alkalinity, arsenic, barium and copper. Most characteristics tested in Level 2 are naturally occurring but can be harmful to human health if found in high enough concentrations. This test also assesses the efficiency of a water softener and/or reverse osmosis filter in removing these molecules. Level 2 testing is recommended every 10 years or with a change in real estate. The lab tests are done by BACOG's partner, the Illinois State Water Survey (ISWS), and results are sent directly to the well owner. The BACOG Level 2 tests are extraordinarily reasonable at $50-65 when compared to private labs.
- There is also Level 3 testing for human-introduced pollutants, such as gasoline, cleaning solvents, and pesticides. This test is facilitated through BACOG as well and costs approximately $120 through a private lab. Tests are sent directly to the property owner. This test is recommended every 10 years or when there is a real estate change.

QB: *How much water do we have, and it is sustainable?*

JA: There is an estimated 6.16 trillion gallons of water in the shallow aquifer system. Not all of it is available for use, however. Not all of this water can even be extracted because it is held tightly in place by soil materials like clays and silts. Only about 1.10 of the 6.16 trillion gallons could actually be extracted by modern pumping technology. But, more important, if all the 1.10 trillion gallons of groundwater were pumped out, water levels in the aquifer system would drop ominously. A BACOG study estimates that roughly 3 percent of the available 1.10 trillion gallons of water in the 600 square mile study area can be used before wells go dry, streams, and water bodies dry up, and natural area plant communities wither and die. We have already withdrawn considerable – but unknown – amounts of water through pumping to serve industries, businesses, communities, and growing populations. The real question is, where is the point of balance between what we use, and what nature replenishes?



For more information, visit www.bacog.org, or contact Janet Agnoletti at 847-381-7871.