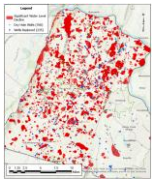

Groundwater Study Frequently Asked Questions (FAQs)

Q.2 Is the map that shows localized pockets of 10 to 40-foot declines in the water table the primary source of concern?

A: No, it simply illustrates that western Loudoun faces a serious, widespread groundwater problem. There are multiple lines of evidence that the groundwater supply in western Loudoun cannot keep pace with the increasing rates of groundwater withdrawal and drought conditions:

- Many wells have gone dry. County reports show hundreds of new wells have been dry holes, including some among replacement wells. Across western Loudoun, new wells are often drilled deeper to reach reliable water flow.
- Hydrostudies have predicted dozens of impacts to well safe yields (see explanation below) ranging from a few to many tens of feet at the edge of new proposed subdivisions.
- With ongoing development, wells are being drilled closer and closer together - currently averaging only a 200-foot separation. Increasingly well users can impact each other's groundwater access, especially during periods of drought.
- Water level in residential wells outside of towns (for example, Lovettsville) were found to fall during town testings. They now should be monitored as part of town well operations.
- County records show that initial average air-lift well yields have declined slightly over time. This is a method to approximate a well's ability to produce water by injecting compressed air into the well.
- Throughout western Loudoun, many long-standing ponds, springs and streams have gone dry in recent years. This shows the water table in those areas has fallen and recharge has been unable to keep pace.
- Streams monitored during nearby well hydrostudies have demonstrated a change in flow direction from gaining to losing conditions. Typically streams "gain" their base flow from groundwater. Hydrostudies that have included well monitoring near streams have demonstrated that nearby wells can cause streams to "lose" groundwater inflow.
- Based on stream baseflow measurements, groundwater recharge is estimated to have fallen by 5-10% over several decades. Daily streamflow data show increasingly longer periods with near zero groundwater recharge. During droughts there have also been more days of non-flowing streams.
- Climate change has contributed to longer and more frequent periods of drought that are occurring with increasing frequency. Combined with more intense rainfall events that increase stormwater runoff, groundwater recharge is not as robust as in the past.
- Where the water table has dropped below the top of bedrock, groundwater storage in the area may be reduced.
- The level of water in a well when it hasn't been pumped is known as the static water level and can be impacted relative to the top of bedrock elevation.
- Land development has and will continue to increase stormwater runoff which demonstrably reduces groundwater recharge.