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Water Resource Management Ordinances

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In contrast with droughts being endured across much of the United States, Dutchess County reliably receives 40+ inches of precipitation per year. This significant environmental factor can help us develop local opportunities for commercial and manufacturing growth, local food supply development, and enhanced general population well-being if we plan well. Climate change models furthermore suggest our region will continue to receive sufficient water in the future.

However, as many people in our area have experienced, just receiving enough water does not guarantee that it will be potable and available to everyone who needs it. To optimize our relatively water-rich advantage, it is wise to plan today how to manage water into the future. Unlike petroleum, water is never “used up” since it can only be lost due to evaporation processes. But water is clearly pollutable, and it can also be locally over-used. Allocation and quality management issues are important to address at the County and the local level.



Aquatic and human water needs should be balanced.

Model Ordinances Available for Municipal Use

One way for municipalities to assure smart water uses is to adopt a local water resource management ordinance. Dutchess County has been working with hydrogeologist Russell Urban-Mead (The Chazen Companies) to develop a model zoning law for use by municipalities who want to ensure the sustainable availability of groundwater resources. The model law includes measures to improve pumping tests for new projects, provides guidance for cluster subdivision layouts, and requires more stormwater infiltration to store runoff for future uses.

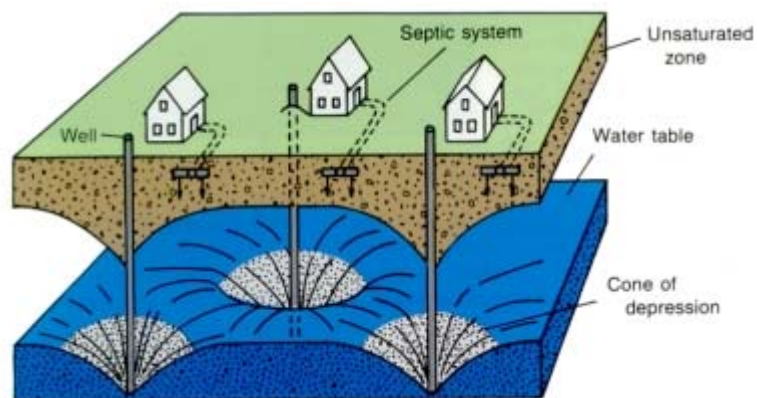
The model law is available from the Dutchess County website and can be adopted either as a simple, [single-level aquifer protection law](#) which provides a generic management program, or as a [two-level aquifer protection law](#) requiring commissioning of an aquifer map. The two-level

aquifer law has the advantage of providing priority protection for more heavily used or vulnerable aquifer areas while lessening administrative burdens elsewhere in a municipality. An early version of this law was adopted in Amenia, and the single-aquifer version of the current model law was adopted in Pleasant Valley in late 2009.

Groundwater Quality Protection in the Model Ordinance

Both versions of the model zoning law provide protection measures missed by State or Federal laws. In other words, this ordinance does not duplicate other protections – it instead fills “gaps”. For example, the model bans burial of any new heating oil tanks under 1,100 gallons since these smaller tanks are not regulated by the State but can still cause groundwater pollution when they leak. Both laws also require presentation of water budget calculations during new project reviews since such calculations are not required under SEQRA but help planning boards understand the regional impact of a new water consuming activity.

The two-level aquifer model provides additional protection for the recharge areas serving public water supply wells and for areas with high concentrations of domestic wells. For a complete list of the protective measures, please see the ordinances. Very few land uses are banned by either model, but special permits and performance standards are called out for higher-risk activities.



Well water suffers where septic systems and wells are too close together.

Flood Control & Recharge Management in the Model Ordinance

Both versions of the model law have been expanded to include techniques to simultaneously alleviate flooding and preserve aquifer recharge by requiring total runoff volumes not to change during most precipitation events in all by the most densely settled parts of a town. More than 80% of precipitation events are less than about 1.25 inches, so preserving infiltration during most rainfall events is relatively simple to accomplish with infiltration devices. These can both limit flooding and preserve aquifer recharge that is critical to maintaining groundwater supplies as well as natural aquifer flows to wetlands and streams.

Cluster Subdivision Layout Guidance in the Model Ordinance

The model law provides guidance limiting water quality risks when wells and septic systems are placed close together in cluster subdivisions. The guidance includes suggesting use of several small clusters instead of one large cluster, arranging lots along a hillside rather than aligning wells and septic systems up and down a hill, and extending protective steel casings in some wells.

Pumping Test Criteria in the Model Ordinance

The NYS Department of Environmental Conservation and NYS Department of Health have specific responsibilities for certain types of well tests. The model ordinance recommends some additional test requirements to fill program gaps. For example, the model ordinance indicates when off-site monitoring should be conducted during pumping tests, how new domestic wells should be tested in larger new subdivisions proposed with individual wells, and what test rates should be used when flow tests are conducted during wet periods.

Long-Term Implications

Our relative water advantage in Dutchess County may stimulate new agricultural and job-supporting manufacturing activity in the coming decades. Managing this water offers an opportunity but also comes with a responsibility. We should look with optimism at the opportunity in front of us and take appropriate planning steps. Adopting a municipal water management ordinance is one part of this planning strategy. Other steps to be explored include paying increased attention to stormwater capture programs, programs to limit evaporative water losses, expanded water connections to the Hudson River above the salt front, more community water interconnection services, and water monitoring programs to inform management feedback.



Wells near streams may influence each other, reducing stream flow or affecting well water quality.

More Information

[Explanation of Model Aquifer Protection Laws](#)

[Single-Level Aquifer Protection Law](#)

[Two-Level Aquifer Protection Law](#)

[D.C. Dept. of Planning and Development](#)

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