A SUSTAINED EFFORT OF LOCAL SOURCE WATER PROTECTION IN COLUMBIA COUNTY

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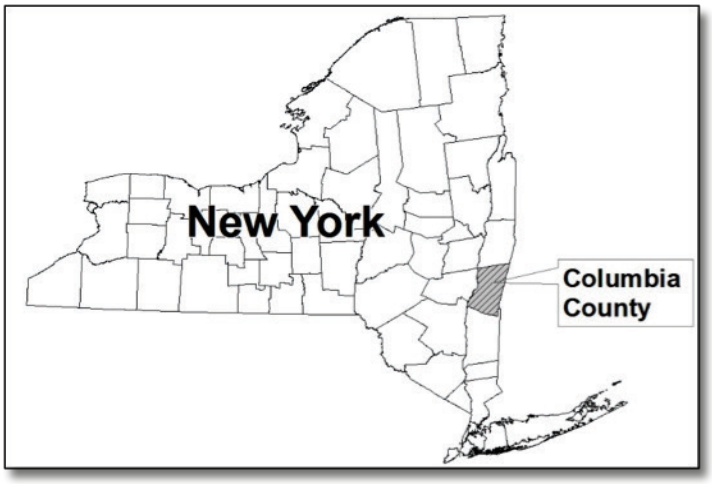
The New York Rural Water Association (NYRWA) has worked with ten towns in Columbia County since 1995, to help them protect their drinking water resources (Figure 1). Most of this source water protection work has been completed at no cost to these municipalities through programs first funded by the United States Environmental Protection Agency and now funded through a joint project of the U.S. Department of Agriculture Farm Service Agency (FSA) and the National Rural Water Association.



Columbia County is in the Hudson River Valley. Today, most communities in the County are a mix of rural residential and agricultural uses. Preservation of remaining farmland is important in many sensitive areas since uses such as livestock grazing and hay production preserve groundwater recharge rates. In contrast, other uses such as commercial or large-scale residential would either increase the amount of impervious surfaces or increase the risk of pollution.

Community leaders across the County have long consistently recognized that drinking water is a natural resource that should be protected for future generations. For nearly all communities in the County, this means groundwater (wells).

GROUNDWATER RESOURCE MAPPING

The first step in a source water protection plan to reduce threats to drinking water resources is identifying the water resource areas to protect. Unfortunately, in Columbia County, aquifer maps are of insufficient detail to be suitable for local officials to make planning decisions. As a consequence, NYRWA has digitally mapped groundwater resources at a more detailed scale as part of local source water protection planning. NYRWA has used Geographic Information System (GIS) software as a mapping tool, and also encompassed techniques such as analysis of aerial photography, compilation of water well data, field review of existing soils and geologic mapping, residential well surveys, etc. From this effort, NYRWA has been able to provide Towns in Columbia County with detailed maps of their groundwater resources.

INVENTORY POTENTIAL SOURCES OF CONTAMINATION

Groundwater resources are susceptible to contamination from a variety of manmade sources. These include various industrial, commercial, residential, and agricultural uses and activities. Practices involving the handling, use, storage, and/or disposal of petroleum and other hazardous substances have the highest potential to contaminate groundwater. Once contaminated, groundwater is very difficult and costly to cleanup.

NYRWA has assisted communities in Columbia County with identifying risks to their groundwater resources and public water supply sources. This has included a review of source water assessments, an analysis of land use from real property data, an evaluation of land cover data, and a compilation of data on facilities that are regulated by state and federal agencies.

HYDROGEOLOGIC ANALYSES

With the aid of GIS, NYRWA has conducted analyses in Columbia County to help answer two fundamental questions: (1) what areas are particularly sensitive to future development; and (2) what should be the minimum lot size to preserve drinking water quality/quantity from future development?

DESIGN AND IMPLEMENT PROTECTION STRATEGIES

NYRWA, with guidance and support from local officials, have designed realistic management strategies in Columbia County to protect local water resources. These protection strategies are then implemented by the local communities. Strategies can include non-regulatory measures such as public education, inter-municipal cooperation, monitoring, land purchase, etc. Protection strategies can also include regulatory tools such as zoning, site plan review, subdivision regulations, etc.

PLANNING FOR THE FUTURE

Finally, NYRWA has helped to identify future hazards that could threaten local water resources as well as plan for future water supply needs. This step commonly includes identifying possible future public water sources, and developing a contingency plan to ensure that there are alternative water supplies in the event of an emergency event.