

NYRWA's Groundwater Source Protection Technical Assistance: Is the Time Right For You?

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I have been helping to develop wellhead/groundwater protection plans for water systems for over eight years. To date, I have assisted in the development of over 100 of these plans. However, there are still many systems and communities that I have not visited or not had contact with. Are you one of them? In this article I am going to explain the types of technical assistance I provide and when groundwater source protection planning is particularly critical.

Five-Step Program

New York Rural Water Association's Groundwater Source Protection Technical Assistance Program assists water systems to protect their groundwater source(s) through a five-step program. These steps are:

1. Formulation of a planning team;
2. Delineation of the wellhead protection area(s);
3. Identification of potential contaminant threats;
4. Design and implementation of protection strategies; and
5. Planning for the future (including emergency planning).

Initially these steps may seem to be too much for the water system to complete. Smaller water systems have limited resources and personnel. I understand that as water operators and local officials, you may not have a great deal of time to devote to source water protection planning. However, that is the very reason NYRWA provides free technical assistance for you. As the association's Groundwater Specialist I will map your wellhead protection area using GIS (geographic information systems), conduct an inventory of land uses and potential contaminant sources, recommend and help implement specific protection strategies, and review emergency procedures. I will help develop a wellhead/groundwater protection plan that is tailored for your system. I draft a protection plan after receiving local input and review throughout the process.

When To Conduct Groundwater Source Protection Planning

I believe that all water systems with groundwater sources could benefit from a wellhead/groundwater protection plan. With our help, there is no cost to the water system or local community. As I previously explained, I assist with the bulk of the work on such a plan. The benefits of a protection plan are obvious. They include public health protection, insurance against future capital outlays and increased user charges, promotion of public confidence, and preservation of valuable resources for future generations.

Although all groundwater systems could obviously benefit from a wellhead/groundwater protection plan, there are three occasions where protection planning is particularly advantageous. These times are: 1) prior to development of a new water supply source; 2) after development of a new or replacement groundwater supply source; or 3) after potential threats of contamination or other source vulnerabilities are identified.

Protection Planning Prior to Groundwater Supply Development

Groundwater source protection planning should be an integral part of the search for a new groundwater source. Therefore, I am frequently involved with wellhead protection planning for a new source that is yet to be developed. Using GIS and existing information, I identify areas with groundwater resource potential that are not susceptible to potential contamination. A tentative wellhead protection area is delineated and protection measures are developed that would allow the source to be safely used as a public water supply source. These measures commonly include purchase of property or easements. The wellhead protection plan can be revised and revisited once the supply well is developed and more information is available. Figure 1 below is a map from a protection plan developed for a village. Test drilling in the vicinity of one of the potential sites has resulted in a successful public water supply source for the village that is protected from contamination.

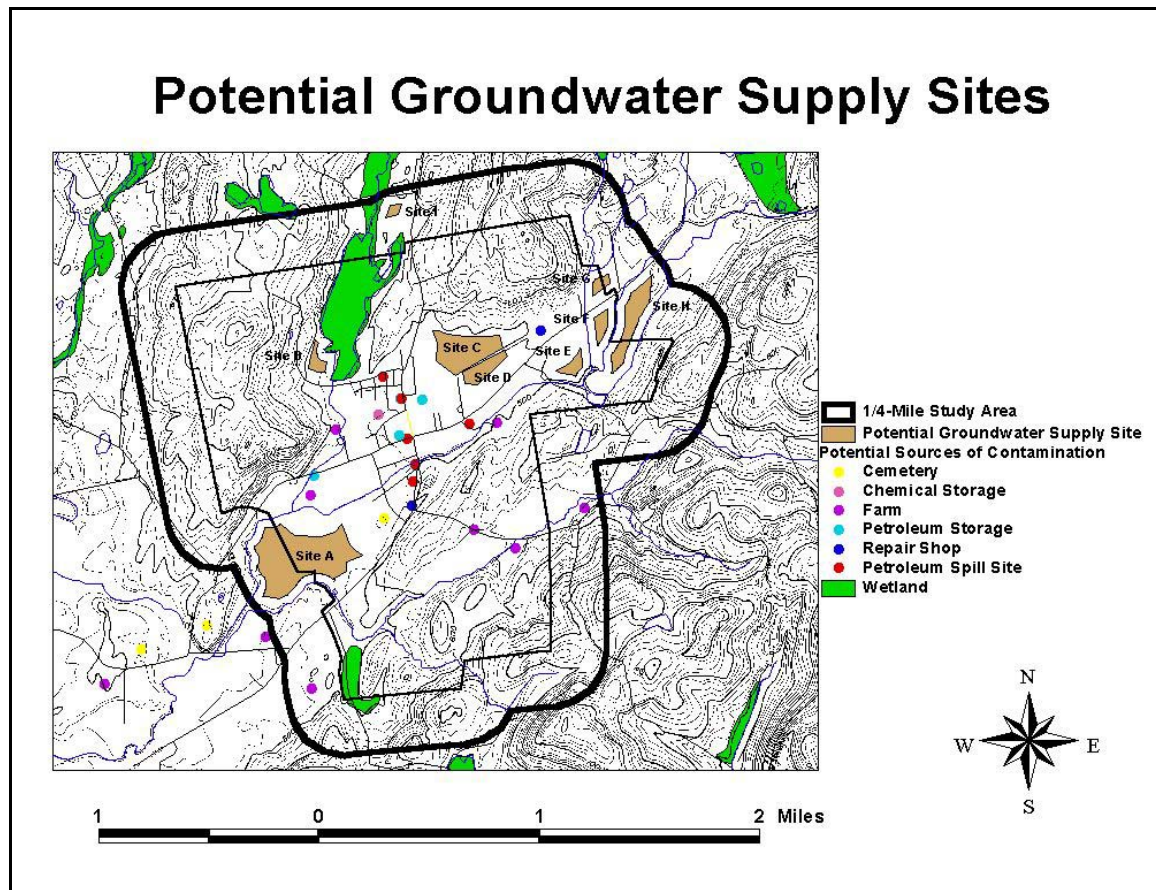


Figure 1.

Protection Planning After Development of a New or Replacement Supply Source

Although groundwater source protection planning is recommended even prior to drilling of a new supply well, I am often not contacted until after the well(s) have been completed. Wellhead protection plans are a requirement for new public supply wells in some regions of New York (check with your local NYSDEC region). In my opinion, a wellhead protection plan should be developed for any new supply well. This is because most local communities have invested a significant amount of money and effort into developing a new supply well. Why not protect this investment in the future? I often liken wellhead and groundwater protection to insurance. Systems have insurance for their vehicles and other aspects of their systems, why not insure their critical drinking water source(s)?

Figure 2 below is a wellhead protection area delineated for a new supply well in an agricultural area. A wellhead protection plan was developed for the new well as part of a Water Supply Application submitted to NYSDEC and NYSDOH.

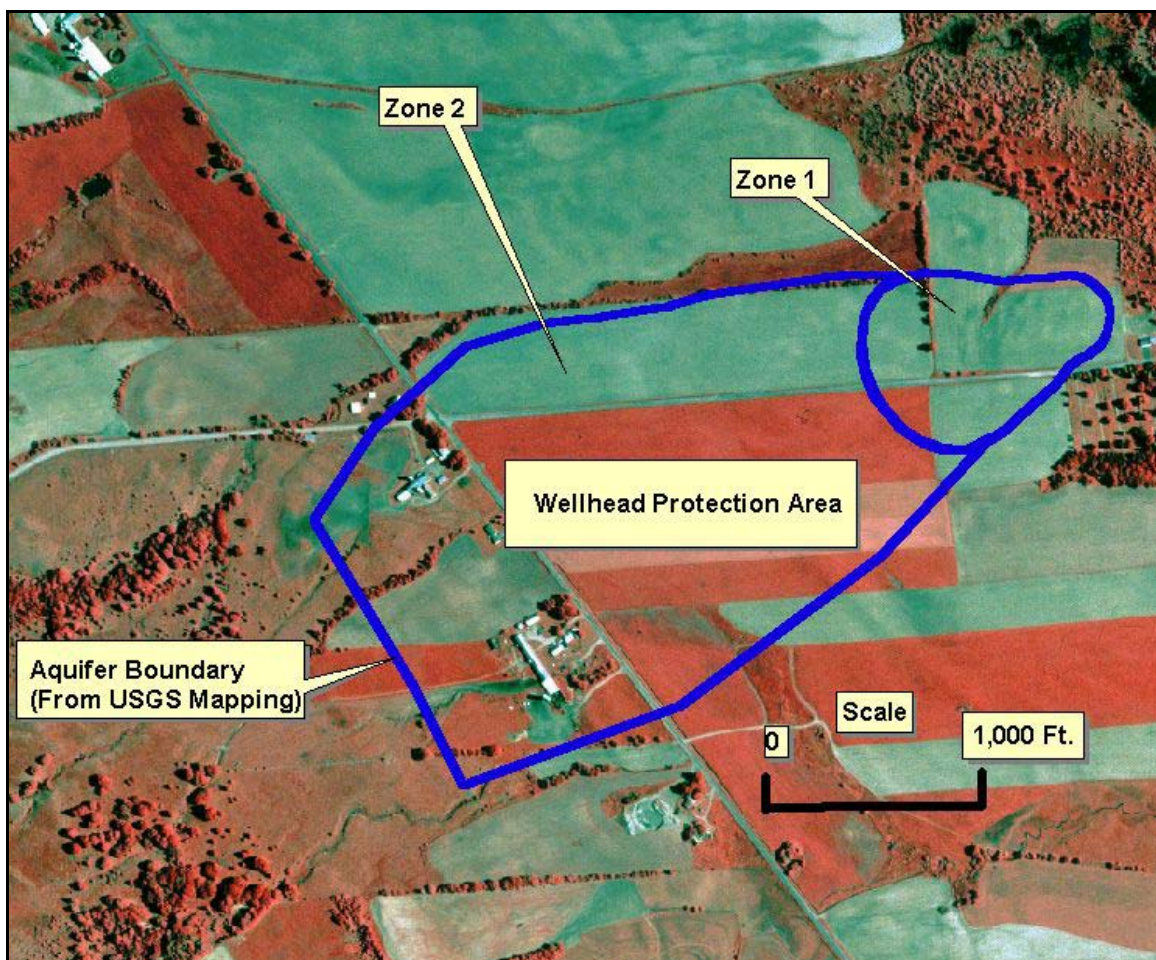


Figure 2.

Groundwater Source Protection Planning After Vulnerabilities Are Identified

Water supply operators and/or local officials often contact me because they correctly perceive that a system's groundwater sources are vulnerable to contamination. These proactive individuals recognize that this vulnerability could be due to a particular land use or activity such as farming, petroleum storage, etc. It could also be associated with the source itself. For example, the groundwater source could be shallow or tap a sensitive aquifer. Vulnerability can change with time. For example, I am often approached by systems when previously undeveloped land adjacent to a source is threatened by development.

Figure 3 is a map from a wellhead protection plan developed for a groundwater source that produces water from karst (i.e. cavernous) bedrock. I was approached to help protect this source after solvent contamination was found in the water. Due to the highly sensitive nature of the aquifer, farming activities were also identified to be of potential concern. Accordingly, it was important to identify those hydrologically sensitive areas of the aquifer where karst bedrock was found at, or near, the ground surface.

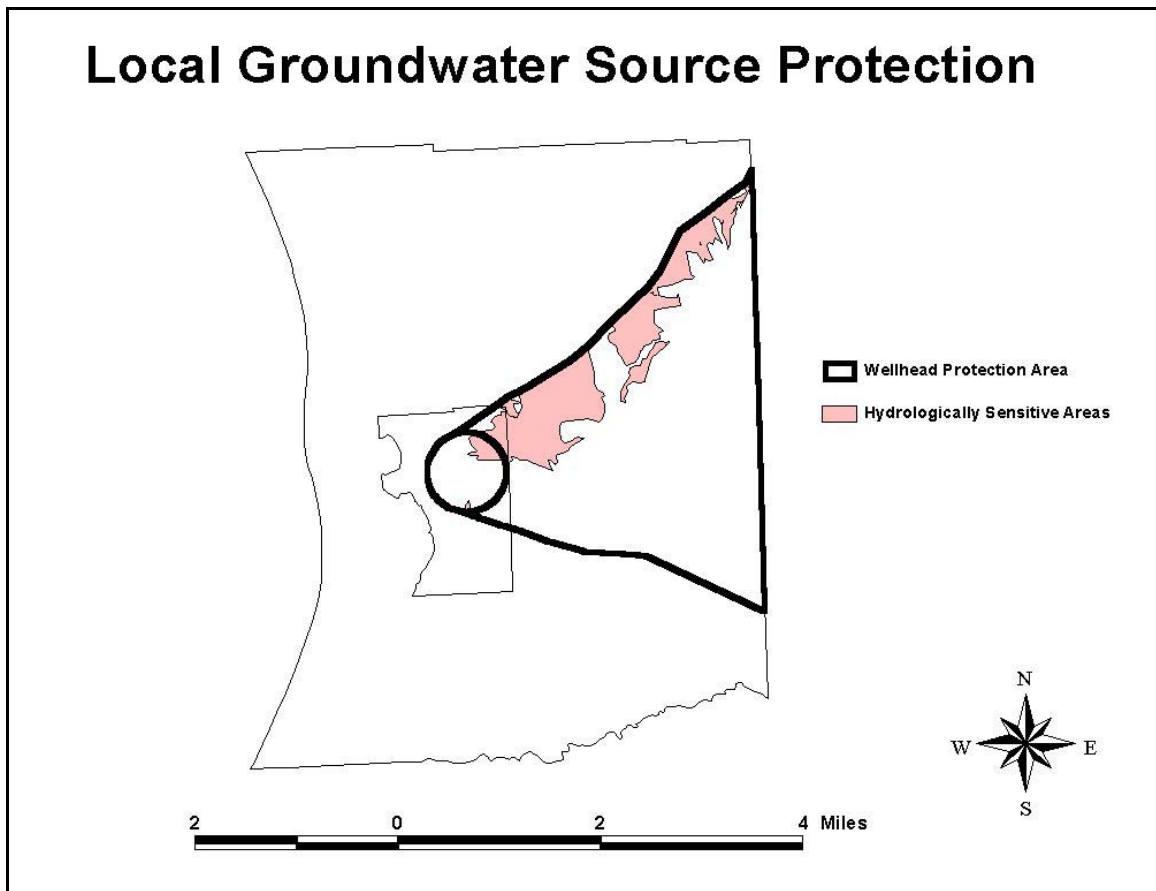


Figure 3.

With the completion of New York's Source Water Assessment Program, more information is now available on source susceptibility to contamination. In the future, I will be working closely with local health departments, and water systems, to identify those public water supply sources that are in most need of groundwater source protection efforts.

Contact Me

Typically it takes me 6 to 12 months to help complete a wellhead/groundwater protection plan with the cooperation of the water system and/or community. Please keep in mind that I am very busy with so many groundwater systems located in New York. The time frame for groundwater source protection planning depends a great deal upon the participation and interest of the system and/or community. Please call me at 1-888-NYRURAL or email me at Winkley@nyruralwater.org if you would like to talk to me about receiving free technical assistance regarding groundwater source protection.