

Source Water Protection

By Robert Morency, Ph.D., Water Resources Specialist

Welcome to this special issue of From Watershed to Well. In this issue, we present examples of work by RCAP Solutions professionals in communities who are addressing their concerns about Source Water Protection.

Protecting the source of your drinking water is sound policy for several reasons.

◆ *Protecting public health by minimizing the chances that a chemical will be introduced into the ground and contaminate the water supply.* Once this happens, the nature of such chemicals, and the geological materials in the ground, make it both difficult and costly to remove the contamination.

◆ *Protecting the public, as rate payers, from the costs associated with replacing a contaminated well or reservoir.* These costs can be devastating for small systems. Locating a site, purchasing the land, and drilling and permitting, and bringing a well into service can cost up to several hundred thousand dollars, not to mention the uncertainty of whether a new source will have the same quality and need the same level of treatment as the previous source did.

Being Pro-Active: Avoiding Contamination

Obviously, keeping the most immediate area around the well or reservoir free from potential contamination sources is vital to

preventing damage from accidental spills. Less obvious are the dangers posed by human activities that are somewhat removed from the immediate area around the source. Hydrogeological studies are necessary to define what areas are more likely to be in the path of water flowing to the well, and at what rate water travels toward the source.

Land uses in the outlying areas also need to be addressed in a Source Water Protection Plan. Given that there has been awareness for at least 50 years that industrial and agricultural chemical use has affected both environmental and public health, there are still controversies that spring up as communities begin to plan, research, and take action toward securing the continued safety of their drinking water. These problems arise as land uses are examined, and some property owners are challenged to take special precautions for the good of



illustration courtesy of EPA Region I

the consumers of the water that might be affected by the land use.

Getting the Word Out

Because only a few contaminants (bacteria, nitrates and gasoline, for example) present acute and noticeable problems such as odor, taste, or gastrointestinal effects, education of the public is a major part of any Source Water Protection Plan. Other pollutants, such as pesticides, solvents, radon and arsenic, are not detected by taste or smell. These don't cause immediate effects, but they are no less a danger to people who might live in a town for their whole lives, and who might be drinking low levels of chemicals that can accumulate over many years.

As development progresses and the rural Northeast faces increased pressure on land use, we are all challenged to begin to see our drinking water as the precious commodity that it is. We are not only stewards of the land, but of the waters, too. ■

Please, Not On Our Wellhead!

By Sarah Curley, Water Resources Specialist

Protection of the area surrounding a water system's wellhead site is the objective of many communities as they seek assistance from RCAP Solutions. Here is a snapshot from one such situation in progress.

Mill River Water Takers, a very small private water system in Mill River, Massachusetts, is an example of a community that is examining which source water protection measures it can take in order to ensure the continuation of high quality drinking water for its customers.

The regulations of the Massachusetts Department of Environmental Protection require that a public water system must own and control the "Zone I", which is a circular plot of land surrounding a water supply well, the size of which depends on how much water the system pumps daily. In the case of the Mill River Water Takers, they do not own the entire 800 foot diameter circle surrounding their water supply. When they had the opportunity to purchase the land, they, like many small, private systems, did not have the available funds. Now that a new owner is interested in developing the land, the Water Takers are again concerned for their water supply, and rightly so.

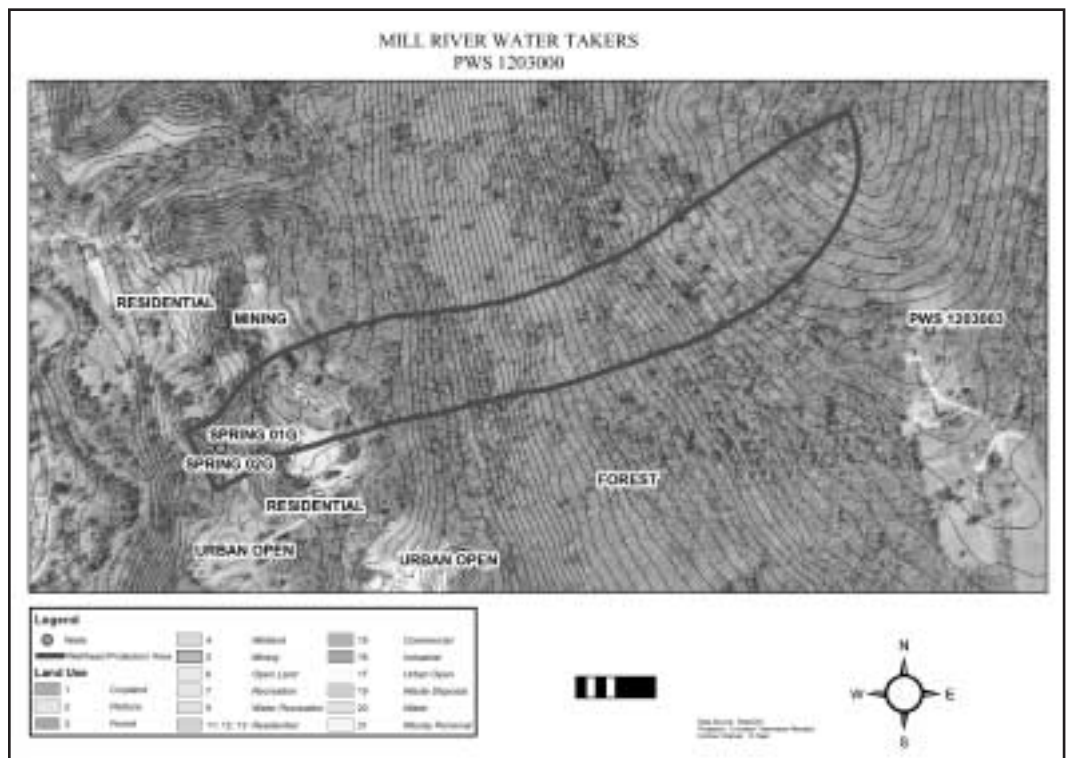
The Water Takers contacted RCAP Solutions requesting guidance on what sort of measures the organization could take in order to enhance the protection of their source water. RCAP

Solutions organized background data prior to a meeting with the board. RCAP input the data into a Geographic Information system (GIS), in order to prepare a map of the area showing the Mill River Water Takers spring locations and Zones I and II. (Zone II is a more extensive piece of land, with less stringent ownership and control requirements.) The area surrounding the source, and the various uses of land therein, were overlain on the GIS maps of the water system's features. Displays such as these multi-layered maps are very useful in enhancing understanding of land use issues because, for example, a picture (i.e., a map) of how close a water

supply source is to a certain land use can dramatically illustrate how water supplies are threatened.

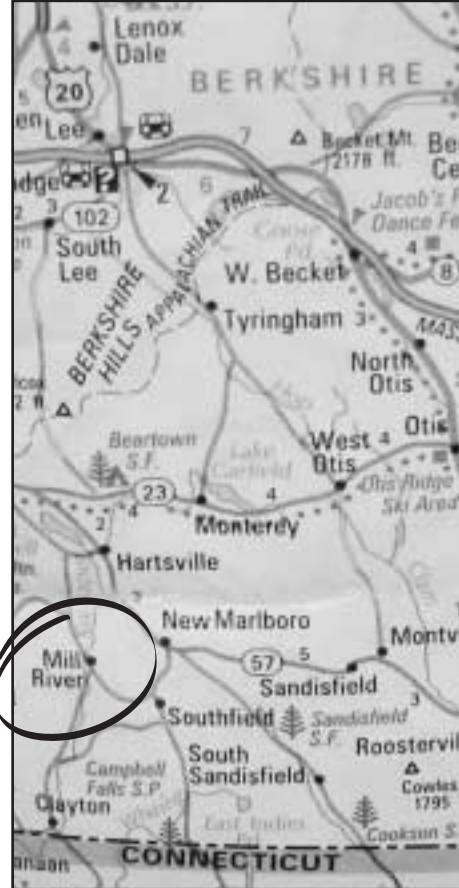
After seeing how the land use issues might affect the safety of the water supply, the Water Takers considered as a first step, establishing a Conservation Restriction on a piece of property that is owned by a neighbor, and which is located within Zone I. The Conservation Restriction would allow the land in question to be owned by either the Town or the Water Takers and would restrict activities within Zone I to only water supply-related activities. The intention is to prevent any development within Zone I, and thus protect the drinking water supply.

Another possible solution to control development within Zone I is a Memorandum of Understanding (MOU), which is an agreement between the Water Takers and the owner of the property. The MOU



would state that no activity will take place in the protection area that would have the potential to contaminate the water supply. One can easily imagine the difficulties that might arise in any situation involving a person's right to use their land versus the community's right to protected drinking water sources.

The Water Takers have enlisted RCAP Solutions to act as a go-between to coordinate the effort because either option—a Conservation Restriction or an MOU—requires establishing relationships between the Mill River Water Takers, the Town of New Marlborough, and the owner of the property in question. RCAP Solutions, in the role as both educator and liaison, is uniquely positioned to help the parties in the negotiations to come to one table and work together toward the common goal of protecting a community's water supply into the future. ■



Cyber Corner

This bulletin, which regularly appears in From Watershed to Well, highlights some of the valuable Internet tools and resources we have found that deal with issues of importance to rural communities. In general you will find here a wide range of web site references dealing with topics that relate to "community development" in the broadest sense. In this issue of the bulletin we are focusing on water supply, with a nod to wastewater management.

In every instance our readers may rest assured that the websites listed and described here have been utilized and thoroughly validated by our professional field staff as accurate and authoritative sources of information.

<http://www.cdtoolbox.org/>

The **Community and Economic Development Toolbox** contains a host of web resources provided by Cornell University's Community and Rural Development Institute (CaRDI). The purpose of this toolbox is to provide accessible tools to local community and economic development (CED) practitioners, such as community leaders, newly elected officials, extension educators, and community technical assistance providers, so that they are more knowledgeable about basic CED issues and are better equipped to assist in decision making and determining the future of their communities.

<http://www.downtowndevelopment.com/links.php>

The **Downtown Research and Development Center** website offers many links to useful web resources for Main Street revitalization, economic development, "Smart Growth," and related planning topics. For more than 50 years, the Downtown Research & Development Center has provided a forum for exchanging news, information and ideas on how to rebuild the hearts of our cities.

<http://www.raconline.org/about/>

A product of the U.S. Department of Health and Human Services' Rural Initiative, the **Rural Assistance Center (RAC)** was established in December 2002 as a rural health and human services "information portal." RAC helps rural communities and other rural stakeholders access the full range of available programs, funding, and research that can enable them to provide quality health and human services to rural residents. Click on "Information Guides" to get access to a wealth of valuable information on scores of rural topics, from Adult Social Services to Workforce Development.

EPA Wellhead Protection (WHPP) Program

The Wellhead Protection (WHPP) Program is a pollution prevention and management program used to protect underground based sources of drinking water. The national WHP Program was established in 1986 by the Safe Drinking Water Act. The law specified that certain program activities, such as delineation, contaminant source inventory, and source management, be incorporated into State Wellhead Protection Programs, which are approved by EPA prior to implementation. While Section 1428 applies only to States, a number of Tribes are implementing the program as well. All States, except Virginia, have EPA approved State WHPP Programs.

State WHPP vary greatly...For example, some require community water systems to develop management plans, while others rely on education and technical assistance to encourage voluntary action. Check with your own state authorities. For links to these, see: <http://www.epa.gov/safewater/source/contacts.html>.

Source: <http://www.epa.gov/safewater/whpnp.html>

Stimulating Responsible Community Development

By Sara Versluis, RCAP, Inc., Washington, DC & the RCAP Solutions Team

RCAP Solutions is not just a drinking and wastewater organization. Witness our work in Stonington, Maine, which initially began with the creation of a Source Water Protection Ordinance but has branched out into additional areas. These include writing a Comprehensive Plan, working with the Stonington Sewer District on an expansion project, and investigating options for economic development. RCAP Solutions community development technical assistance to Stonington typifies many of the challenges facing communities we serve.



Granite ledges on Caterpillar Hill

Photo courtesy Terrell Lester, Deer Isle, ME

On The Edge of Penobscot Bay

Famous for its granite (and, it goes without saying, lobster), Stonington, Maine is an island community in “downeast” Maine, located at the tip of Deer Isle in Penobscot Bay. Stonington shares the island with only one other community, which adds to its sense of uniqueness.

Although seasonal tourism contributes to the local economy, the principal industry of the area is fishing (the granite quarries are nearly abandoned). There are very few ‘newcomers’ among the year-round residents. According to the US Census (2000), more than nine residents in ten have lived in the community at least 5 years, and many families have called Stonington “home” for generations. Over half of the town’s 1,152 residents are low-income, with a median household income of \$28,894.

Stonington is distinctly rural, which has led to certain challenges. Noting that Stonington’s

Main Street is just one block long, Evelyn Duncan, the town Selectmen’s Board Chairperson quips: “We don’t have ‘blocks’ up here!” Nevertheless, there is a small, concentrated business district that backs up directly to the waterfront. Stonington’s public water system (pws) primarily serves this business area.

The system depends upon several wells located in one watershed. Surrounding these municipal wells, roughly 50 residences using private water supplies (household wells) draw from the same watershed. So any contamination is potentially dangerous to many.

Source Water Protection

RCAP Solutions technical assistance provider Art Astarita began working with Stonington on a Source Water Protection (SWP)

Ordinance and delineation of the watershed protection areas. Astarita walked the land, conducting GPS surveys and collecting information on water system pipelines, well locations, and ownership parcels. He compiled this information on maps that were presented to residents. Town meeting discussions of these findings generated requests for more information, which Astarita subsequently provided.

A proposed SWP ordinance was presented to the public for vote. Approximately 50 housing units not serviced by the public water system fell into the watershed protection area and would face land use restrictions under the ordinance. Additionally, public water system usage could potentially affect the homeowners’ private wells. “The residents were

not only all of a sudden facing restrictions on their land, but there were no restrictions on what the town could do with the water, which might deplete the overall supply for the private parties” said John Moriarty, another RCAP Solutions TAP. The vote failed 57 to 47.

The ordinance was revised to include restrictions based on gallon usage per day for the public water system. RCAP spoke with the Stonington Water Superintendent about reviewing the ordinance with landowners and trying to get water users to understand the importance of their votes. RCAP assisted the SWP Ordinance Committee in creating an informational flyer regarding questions about the ordinance and in other educational efforts as well. When the ordinance was put to a vote a second time, it passed 70 to 30.

While Stonington was working to pass the SWP ordinance, the State of Maine issued a statute declaring that towns could not implement new ordinances without first developing and approving a comprehensive plan. So Moriarty began participating on the town’s Comprehensive Plan Committee

and assisted in needed research and integrated plan development. The Stonington plan aimed to include the multiple aspects of a watershed protection ordinance, a shorelands protection ordinance, and existing and planned community infrastructure and economic concerns.

In March 2004 a public vote on the comprehensive plan “...passed with a nearly 10 to 1 margin, which is unusually large,” Moriarty observes. Stonington submitted their community-accepted comprehensive plan to the State Planning Office for comments. The State requested that the town make minor changes. The plan was then resubmitted to the State and Stonington is currently awaiting final State approval. During this waiting period, there is some question as to whether the SWP ordinance is actually enforceable. Moreover, as in many other states, state funding resources are quickly

Image courtesy mapquest.com



Stonington is located on the south edge of Deer Isle

designating the watershed, and the development of educational materials regarding protecting source waters. When the town received a grant of \$1,950, the town passed a resolution to place the signs and to initiate a school program on source protection.

Geology Works Against Waste Management

Stonington is a former center of granite quarrying and finishing. Deer Isle granite was used to build Rockefeller Center, the New York County Courthouse, and the John F. Kennedy Memorial in Arlington National Cemetery. It was also used to build some well-known bridges, such as the Manhattan and the George Washington Bridges in New York City. Evidence of abandoned quarries can be found throughout the area. While the geology may have contributed to local industry, it presents a problem for wastewater treatment. “The island is a rock, and therefore everyone’s leach field is limited,” said Christina Shipp, Stonington Sewer District Trustees Chairperson.

being limited to communities with State-approved comprehensive plans.

RCAP also helped the water district apply for a wellhead protection grant for placing signs



Photo courtesy Terrell Lester, Deer Isle, ME

Father and Son in Stonington harbor

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Responsible Community Development

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One neighborhood in the town has soil particularly unsuitable for septic systems. There and elsewhere, some residents straight-pipe raw sewage into the sea. Legend has it that an old Buick hull once served as a makeshift septic system.

The town has a private/public wastewater system. 260 septic systems serve approximately 288 houses and businesses, which involve a total population of 350. In this system, waste flows from individual homes and businesses to pump stations located in town. The waste is then pumped to a central point where it is treated and discharged.

Roughly 28 houses were using failing septic systems. This neighborhood was located outside Sewer District Boundaries. RCAP’s Moriarty identified an under-utilized siphon tank that could serve as a connection point to the district system. Moriarty met with the Sewer District Board



to discuss ways to remediate the situation, obtain funding, and inform the public.

Certifying Eligibility and Finding Funding Opportunities

RCAP Solutions assisted with an income survey, which showed that

in the area to be affected by the wastewater treatment system, income levels would qualify for CDBG and USDA grant assistance. With RCAP’s assistance, Stonington applied for and received a CDBG planning grant for the sewer

district extension. Stonington also applied for a CDBG infrastructure grant of roughly \$1 million for an extension of services outside the district boundaries.

The Stonington Sewer District is a non-profit entity that operates outside of the municipal umbrella. RCAP TAP Sharon Ostrander is currently conducting an asset management plan for the town. “The Asset Management Plan will serve as a basis for the district—and the town—to understand what the district faces regarding immediate and long-term maintenance issues,” explains Astarita. The District is hoping for the town to take over sewer district operations, and the assessment will clarify their situation. “My feeling is that if they work together they can accomplish more.” Ostrander adds: “Currently I am working with the system operator about building an inventory of assets.”

“Most small communities are not organized in a way that facilitates comprehensive planning. They don’t have the time, the money or the qualified help to do it. Technical assistance providers have the opportunity to inspire and assist communities with their sense of strategic initiative. They have the ability to network with professionals in other disciplines so that isolated strategic initiatives can become part of a more comprehensive way of thinking. They also have the ability to foster communication: communication between communities, between communities and funders, or with others in a drainage basin. Effective communication, combined with a strategic sensibility, can help put small communities back in the driver’s seat—and moving forward with confidence towards a more prosperous, secure, and livable future.”

— Kevin Smith, Program Director
The Tug Hill Commission (NY)



Going to the lobster pots downeast from Stonington

In the context of the submitted Comprehensive Plan and the Watershed Protection Ordinance, Moriarty has advised the town and Sewer District regarding the future of the District, as well as other town-organized efforts related to economic development. He has researched any legislative obstacles to district expansion and the district's charter and bylaws.

Comprehensive Community Development

RCAP is also assisting Stonington in evaluating comprehensive integrated development, including a regional approach to issues of housing, economic development, infrastructure, cultural preservation and universal capacity development. Moriarty met with Shipps and resident Linda Nelson to discuss forming a nonprofit or co-op in order to acquire funding for economic development.

One project revolves around a former general store. The store

is housed in a large building, which closed in 2004 and now stands empty. "The problem is that the value of real estate (and property taxes) has risen so high that the general store did not have a high enough vol-

ume of sales to make ends meet," says Moriarty. RCAP is assisting the community to develop a nonprofit entity that can apply for various funding through USDA, HUD, and the Small Business Association to develop the building. The community is getting together to discuss what should be done with the building. Its owner is a lifelong Stonington resident who supports the project.

Lessons Learned

RCAP Solutions is playing a crucial role in helping Stonington achieve its goals. "This project is a great example of RCAP contributions to small rural communities. Our initial path started with source water protection, but it has blossomed into wastewater management and comprehensive community planning," Astarita summarizes. "Our work in Stonington demonstrates how RCAP Solutions works today." To which Moriarty adds: "As an organization we have adopted a

strategic plan that calls for RCAP Solutions to become a comprehensive community development organization and we now think in terms of how water and wastewater matters impact the big picture in communities. Sort of a holistic approach, if you will."

The Stonington project also highlights a key challenge RCAP encounters when working in communities. "I think the biggest issue in the community is getting all the parties to start talking to each other. Dealing with project elements required residents and town officials to communicate with each other. Each party starts to understand each other and their positions," says Ostrander.

As Kevin Smith, Director of the Tug Hill Commission (NY) noted in an article in *From Watershed to Well, Winter, 2003*: "[RCAP Solutions has] the opportunity to inspire and assist communities with their sense of strategic initiative." This is recognized on the ground, in Stonington: "You couldn't pay those people [RCAP] enough for what they do," says Shipps. "For a community like Stonington, which is poor 'though everybody works, we can't afford to pay professionals to do what [RCAP] does."

Shipps notes that without RCAP's technical assistance, they would have been unable to apply for grants and complete the necessary work. "Their expertise is just invaluable," she observes. ■

Raquette Lake—A Drinking Water Compliance Challenge

By Bruce G. Goodale, P.E., Water Resources Specialist

The hamlet of Raquette Lake is just a tiny blip of a place. Located in the forested heart of the vast Adirondack Park in northern New York, it has about 150 residents. Tourism is its major industry. During summer months its population swells with visitors who come to enjoy the area's natural beauty.

Unfit To Drink

Given the pristine setting, it is surprising to learn that Raquette Lake had a water supply that was both unsafe and unpalatable. Moreover, to bring the system into compliance with drinking water standards would be an ordeal extending almost fifteen years.

The system's problem was its unfiltered water source from a small, nearby reservoir that was constructed in the 1930's. Over the years the quality of this water deteriorated as organic material from decaying vegetation accumulated in the reservoir. This yielded water that was brown—colored to the point that it stained clothing and fixtures. The water also had taste and odor problems, making it undrinkable.



A reservoir in trouble

Of even greater concern was the microbiological safety of the water. Since the early 1990's, the community has been under State Health Department orders to comply with the Surface Water Treatment Rule requirements of the federal Safe Drinking Water Act, whose purpose is to eliminate the risk of microbiological contamination. In addition, the interaction of chlorine with precursor organic matter in the raw water produced Trihalomethane levels that exceeded federal and state standards. Several "boil water" orders were issued to protect public health. Potable water also had to be trucked in periodically.

Finding A Solution

From a technical viewpoint, the solution to Raquette Lake's water problems appeared to be fairly straight-forward—either construct filtration facilities or develop a ground water source. Engineering studies showed that development and operation of filtration facilities to treat surface water would be



possible, but very difficult. Furthermore, it would be a prohibitively expensive project for the many low-income system users. Development of a ground water source looked to be the only feasible option.

Hydrogeologic studies conducted by RCAP Solutions staff and consultants identified promising well locations near the existing reservoir. However these sites were located on State Forest Preserve land whose use is highly restricted by the State Constitution. The Constitution allows for the development of reservoirs on Forest Preserve land for public water supply use, but it is silent about the permissibility of drilling wells.

Encountering Legal Obstacles

On behalf of the hamlet, The Town of Long Lake applied to the State Department of Environmental Conservation (DEC) seeking approval to drill test wells on Forest Preserve land. In September 1994, the Town's request was denied. The agency felt there was no legal authority in the Constitution to permit the drilling of wells on Forest Preserve land.

The Town persevered. Through the initiative of the late

Supervisor Christine Snide, the Town submitted another request to drill wells. This second request was prompted in part by the rapidly deteriorating quality of the reservoir water and the associated need for “boil water” orders. This time the Town also had the full support of the NYS Commissioner of Health.

Progress

In July 2003, the State DEC granted approval to drill test wells on Forest Preserve land on an emergency basis. The Town acted quickly. Working with its engineer, a hydrogeologic firm and RCAP, potential well locations were identified near the existing reservoir. A local well driller was hired who drilled three rock wells nearly 400 feet deep. Two of the three wells each produced 30 gallons per minute which was more than enough to supply the community.

Under the leadership of Supervisor Gregg Wallace and Deputy Supervisor Cynthia Thompson, the Town then proceeded to connect the new wells to the water system on a temporary basis. Specific plans were developed and were approved by the regulatory agencies. Using its own work forces the Town installed new connecting water lines and electrical cable and constructed a temporary treatment building. An emergency grant of \$69,000 from the USDA/ Rural Development greatly assisted in financing much of this work.

Success

These actions finally gave residents a high quality water supply and brought the system into regu-

latory compliance—at least on an interim basis. Given the legal importance of the Forest Preserve land issue, the DEC approval to drill the wells and to connect to the system stipulated that all facilities must be “temporary” in nature and capable of being removed if required. To gain approval to construct permanent facilities and obtain long term Drinking Water State Revolving Fund (DWSRF) financing, the Town was required to receive formal regulatory approval, including the preparation of a full environmental impact statement.

On November 15, 2004, the community held a “You Can Drink It” celebration that formally recognized connection of the new wells to the system and the lifting of the “boil water” order.

At the time of this writing the community is still awaiting formal approval of the permanent project. With major RCAP technical assistance, the environmental impact statement has been completed and is awaiting formal issuance. All project plans, permits and funding applications have also been submitted.

Setting Precedent

The lengthy approval process has been very controversial because of the environmental precedent that would be set in approving well development on Forest Preserve



Map courtesy of Kelsie Wink

land. This issue is of statewide importance and even attracted the attention of the *New York Times* which published a feature article on the project in its October 5, 2004 edition.

Throughout much of this process, RCAP Solutions has played an important technical assistance role for this community. This work has included: carrying out groundwater and project planning studies, selection of a project engineer, technical and cost analyses, conducting a community income survey, regulatory compliance analysis, environmental impact assessment, funding application preparation, and many other tasks. These efforts were instrumental in securing a DWSRF \$538,000 grant and a \$180,000 interest-free loan commitment for the permanent project.

It is rare for any community to go through this type of odyssey in securing regulatory compliance. The saga demonstrates that external institutional issues sometimes greatly complicate the compliance process and can cause long delays that are unforeseen. ■

Out of Compliance! When both systems fail...

By Bruce Goodale, P.E., Water Resources Specialist

Situated on the western shore of Lake Champlain in northern New York State, the hamlet of Westport faces a condition common to many small communities in the Adirondack region. The winters here are long, snowy and cold. Economic opportunities are very limited and heavily dependent on summer tourism. Many of its year-round residents are low-income. In addition, Westport needs to upgrade its aging water supply and wastewater systems to bring them into compliance. Finding resources to address these problems is an enormous undertaking.



Drinking Water Compliance Challenges

The existing community water system serves a population of about 900. It is dependent upon a spring for the water source. However, the spring has been determined by the Department of Health to be a “groundwater source under the direct influence of surface water.” This means that Westport must develop a new groundwater supply or provide filtration of the existing source. Add to this other significant problems.

- The water system has lead and copper violations.
- It has limited storage.
- Large portions of the distribution system are also undersized and need replacement.

The estimated cost for the needed water system improvements is \$6.4 million.

Aging Wastewater Infrastructure Threatens Watershed Quality

The existing wastewater system also requires major upgrades. The 30 year old treatment plant has reached the end of its effective life. A major upgrade is needed

to assure protection of nearby Lake Champlain where pollutions would have major consequences: Lake Champlain is both an interstate and an international body of water. The sewer collection system also has major infiltration and inflow problems. The Department of Environmental Conservation issued an order to bring the system into compliance. These upgrades will cost an additional \$4.1 million.

Finding Solutions

The RCAP Solutions specialist worked with town officials and citizen members of a Water & Sewer committee on a number of tasks to address its water needs. The specialist assisted the community in the selection of an engineer. This selection process included the issuance of a formal Request for Proposals and conducting meetings and interviews with candidate firms. The specialist also advised the community on project financial assistance,

Inflow and infiltration are terms used to describe the ways that groundwater and stormwater enter the sanitary sewer system.

Inflow is water that is dumped into the sewer system through improper connections, such as downspouts, groundwater sump pumps and man holes.

Infiltration is groundwater that enters the sewer system through leaks in the pipe.

Whether through inflow or infiltration, storm water run-off and other non-waste water entering the wastewater system dramatically increase the overall quantity of water being treated (unnecessarily) by the wastewater treatment facilities—thus driving up the cost of wastewater treatment.





groundwater and treatment options, regulatory compliance issues and adoption of updated system operating ordinances.

A major RCAP work task was to assist the community in completing income surveys to demonstrate need for financial assistance. The completed income surveys helped establish hardship eligibility for \$3.4 million in grants and \$7.1 million in interest-free loans from Rural Development,

the Community Development Block Grant (CDBG) program, the New York State Environmental Bond Act, and the Drinking Water and Clean Water State Revolving Funds. The income survey work also had spin-off benefits in supporting other community infrastructure improvements. The survey data showed that two low income neighborhoods in the hamlet qualified for U.S. Housing

and Urban Development monies for sidewalks and waterfront improvement facilities.

Success Is In The Picture

Westport is currently moving ahead to implement needed water supply and wastewater system improvements. Construction bids will be issued in the summer of 2005 and construction work will likely continue into 2006. These system improvements will bring both water systems into compliance. Although the improvements will place a heavier financial burden on users, technical assistance helped the community to achieve its goals while keeping these costs as low as reasonably achievable. ■

SOURCES OF DRINKING WATER

Drinking water comes from surface water and ground water. ...Smaller water systems tend to use ground water. Including the approximately 23 million Americans who use ground water as a private drinking water source, slightly more than half of the population receives its drinking water from ground water sources.

Surface water includes rivers, lakes, and reservoirs. Ground water is pumped from wells that are drilled into aquifers. Aquifers are geologic formations that contain water. The quantity of water in an aquifer and the water produced by a well depend on the nature of the rock, sand, or soil in the aquifer where the well withdraws water. Drinking water wells may be shallow (50 feet or less) or deep (more than 1,000 feet). Your water utility or your public works department can tell you the source of your public drinking water supply.

WHAT IS A PUBLIC WATER SYSTEM?

The Safe Drinking Water Act (SDWA) defines a public water system as one that serves piped water to at least twenty five persons or fifteen service connections for at least sixty days per year. Such systems may be owned by homeowner associations, investor-owned water companies, local governments, and others. Water that does not come from a public water supply, and which serves one or only a few homes, is called a private supply.

Community water systems are public systems that serve people year-round in their homes. EPA also regulates other kinds of public water systems—such as those at schools, factories, campgrounds, or restaurants—that have their own water supply. The data shown in this report cover only community water systems because they are the source of most drinking water.

HOW DOES WATER GET TO MY FAUCET?

In a typical community water supply system, water is transported under pressure through a distribution network of buried pipes. Smaller pipes, called house service lines, are attached to the main water lines to bring water from the distribution network to your house. In many community water supply systems, water pressure is provided by pumping water up into storage tanks that store water at higher elevations than the houses they serve. The force of gravity then “pushes” the water into your home when you open your tap. Houses on a private supply usually get their water from a private well. A pump brings the water out of the ground and into a small tank within the home, where the water is stored under pressure.

*Source of information:
Environmental Protection Agency*

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