

By Ellen Kiley and Julie Kollar

# POWER IN NUMBERS

*The Tioga County Source Water  
Protection Coalition finds  
successes through cooperation*



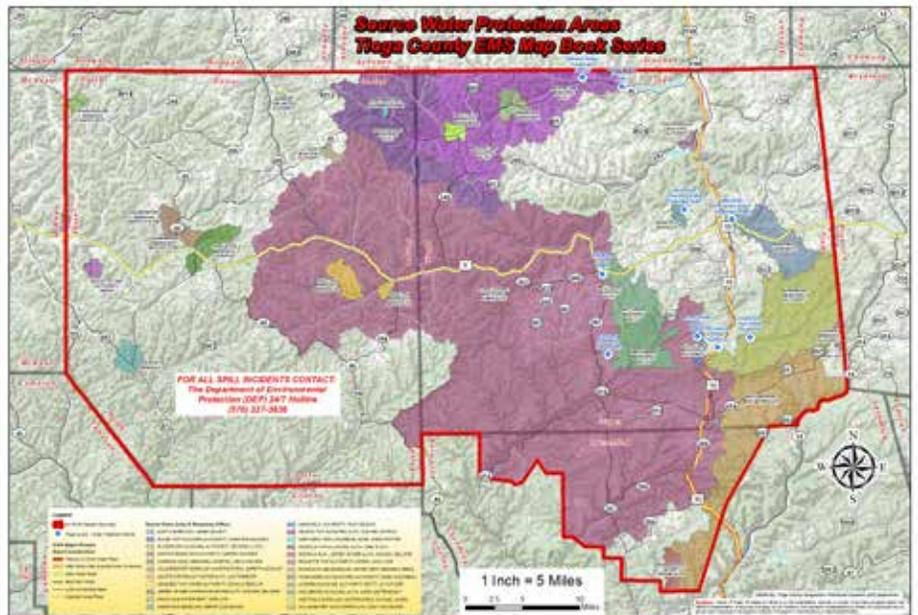
**W**hy not do it yourself? You're a local water supplier: you have your own treatment facilities, your own source water protection (SWP) plan, your own board, your own community to worry about – why not go it alone? For many years, that has been the approach of individual drinking water suppliers around Pennsylvania.

The latest trend though, is that water suppliers are seeing definite advantages to forming partnerships with fellow water systems, local officials and even conservation groups. "There is more power in numbers," says Carl Cox, President of Knoxville Borough Council, "when dealing with the DEP, with the legislature, with anybody. A county-wide organization has much more clout than an individual water supplier."

Cox is the acting chairman of a new group known as the Tioga County Source Water Protection Coalition. The coalition was launched in 2011 with the support of a Source Water Protection Education Grant awarded to the Tioga County Conservation District by the Water Resources Education Network (WREN). Erica Tomlinson, now District Manager at the Tioga County Conservation District, submitted the grant proposal to WREN along with initial grant partners: Tioga County Conservation District, Tioga County Planning Commission, Pennsylvania Department of Environmental Protection (DEP), Pennsylvania Rural Water Association and six public water systems: Borough of Wellsboro, Duncan Township Municipal Water Authority, Knoxville Borough Water Department, Osceola Township Water Authority, Tioga Borough Municipal Authority and Westfield Borough.

Water supplier membership has now more than doubled to include fourteen public water systems, including Bakercrest Personal Care Home, Bloss Township Municipal Authority, Blossburg Municipal Authority, Elkland Borough Authority, Hamilton Township Municipal Authority, Mansfield Borough Municipal Authority, Nelson Township Municipal Authority and Watrous Water Association, Inc. GTS Technologies has also been attending coalition meetings. The goal is to encourage all 24 community drinking water suppliers in Tioga County to participate as active members.

"The Coalition is easy to join, and membership is free," states Erica Tomlinson, District Manager of the Tioga County



**NORTHERN TIER PROTECTION** The source water protection area includes primarily Tioga County, but it also affects neighboring counties as they are part of the watershed as well

Conservation District and WREN Grant Project Leader. The Coalition holds quarterly meetings, hosted by a different water supplier each time, allowing the members to tour each facility and exchange ideas. Drinking water suppliers are not required to have a SWP plan in place to join, but as members, they will be encouraged to begin the voluntary process and will receive guidance and assistance from current members.

Home to one of the state's most spectacular natural attractions, the Pennsylvania Grand Canyon, Tioga County is rural with a population of just over 42,000 people. Tioga's name is derived from an Indian word that means "the forks of a stream" to honor the Tioga River. About one half of County residents are served by public water. Current coalition members serve a combined total of about 78 percent of the population served by public water, about 15,000 people.

#### What is Source Water Protection?

SWP is a science-based way to protect the life expectancy of public water supplies by preventing pollution from reaching raw drinking water sources used by the community. Drinking water sources include groundwater aquifers, springs, streams, reservoirs, or river intakes. Establishing an SWP program is voluntary in Pennsylvania, and allows for local control over local water quality issues. The Pennsylvania DEP encourages all public water systems in the state to implement a robust continuous source water protection program.

Such measures build an extra margin of safety that diversifies water supply risk management beyond 100 percent reliance on water treatment technology alone. Source Water Protection provides the first line of defense to keep harmful contaminants out of the water supply, including emerging contaminants. With protected sources, safer and more reliable raw water enters the treatment plant, and as a result, systems can furnish higher quality drinking water to customers at lower cost.

Asked why more water suppliers do not already have an SWP plan in place, Cox said, "Because source water protection plans aren't mandated. A plan can be developed, right now, for free, except for the appropriate signage" along transportation corridors. Cox believes that time is of the essence, and encourages drinking water suppliers to get to work on their protection plans now, given the pace of change in Pennsylvania.

The process is budget-friendly, as DEP provides funding and technical support to assist systems in developing a source water protection plan at no out-of-pocket cost that will:

- Map out key drinking water recharge zones for intakes or wells based on local hydrogeology
- Inventory potential sources of contamination to public water supply
- Provide a pollution risk assessment based on potential contaminant sources
- Provide a customized set of source water



**911 COMMUNICATIONS** The Tioga system is designed so that when a call comes into a 911 operator about an accident with a spill, the GIS software can display the source water zones “live” on the dispatcher’s emergency response map with other layers

management options for short and long term risk reduction

- Assist emergency response and future water supply planning

The initial driving goal for the Tioga Coalition founders was to improve emergency response coordination to potentially hazardous spills in sensitive water supply areas with the Tioga County Department of Emergency Services. To accomplish this objective, the members deemed it essential to integrate the source water protection areas defined in each water supplier’s SWP plan with Tioga County’s 911 system. Scott Zubek, Director of the Tioga County GIS Department, took on the challenge and supervised Pennsylvania’s first successful integration of source water protection data into a County 911 GIS system. (Standing for Geographic Information System, GIS is a way to link the spatial representation of an area, like a map, to a database of important information, in this case, local drinking water supplies.)

The Tioga system is designed so that when a call comes into a 911 operator about an accident with a spill, the GIS software can display the source water zones “live” on the dispatcher’s emergency response map with other layers such as roads, structure location points, etc. It immediately notifies the dispatcher if the spill is in a source water protection area. The operator is able to quickly relay precise location information to the DEP emergency response team. According to Zubek, “a dispatcher... now has a digital, geographic element which will determine if a spill incident

has occurred within an SWP watershed area and can relay further geographic detail.”

Rapid notification coupled with accurate geographic data about the spill location is especially important in rural areas, and enables water systems to take immediate proactive steps to avoid damage to water treatment equipment or worse, possibly jeopardize public health. Without source water area coordinated spill response, many public water suppliers may be unaware that a spill event has even occurred in their recharge area that could threaten their water system. The Tioga EMS 911 Center, which covers neighboring Potter County and parts of Lycoming, McKean and Bradford counties under its Emergency Services dispatching, is the first region in the state to develop a GIS-based system with automatic notification to assist affected drinking water suppliers so they can take immediate action to protect the community.

Tioga Coalition members hope that the successful implementation of this system will encourage other coalitions and counties to dust off their source water protection maps and update them with this new technology for improved emergency response. Zubek commented, “The techniques and concepts used to create this SWP data layer are well-known contemporary methods utilized by most GIS professionals. So I do not for see any reason why these GIS initiatives would not be compatible with other regions and systems.” Faster response times to hazardous spills are an important way to protect water supplies and

the whole community. Zubek was delighted to present the project and have one of the work products, the hard-copy 3’ x 3’ maps generated for the water suppliers and the 11”x17” EMS-911 map books, win first place in the map gallery/poster exhibit at the 2012 NW PA GIS Conference at Clarion University this past October.

The Tioga County Source Water Protection Coalition reached out last fall to inform the Tioga County Board of Commissioners about their goal to ensure that there is enough clean water in the county today and for future generations. While gas well drilling has sparked concerns in the county, the Coalition recognized the need to address the full range of potential threats that also include agricultural impacts, roadway spills, failing septic systems, and polluted runoff.

The Board of Commissioners demonstrated their support by authorizing the time and involvement of Tioga County Planning Commission Director, Jim Weaver. He has been actively involved in source water education for years. Among his many community outreach efforts, Jim has trained citizens in a group called the Pine Creek Headwaters Protection Waterdogs to recognize and report public safety concerns or environmental problems associated with gas well drilling. “The opportunity to collaborate with on the ground water operators and municipalities charged with protecting and providing our drinking water is a powerful tool. While the day to day running of a water supply is fundamental to the community the public outreach and education of how and why can best be delivered by a coalition of suppliers working together,” said Weaver.

The Tioga County Source Water Protection group has reached out even further to other Source Water Protection coalitions in nearby Lycoming and Potter counties exchanging ideas and setting the stage for future cooperative efforts. “Water supplies, recharge areas, pollution – these things don’t understand political boundaries,” said Mark Stephens, P.G., SWP Program Manager at the DEP North Central Region in Williamsport. He feels that increased cooperation among water systems, municipalities and source water protection groups bolsters drinking water educational and legislative efforts in the state.

The Tioga County Source Water Protection Coalition developed a logo, and used a portion of grant funds to produce an educational

brochure that informs local residents about potential threats to their drinking water, and outlines easy steps that community members can take to help protect their water. Coalition members distributed brochures at the 4-H Environmental Appreciation Days, and gave entertaining presentations using an EnviroScape® Watershed model, found at [www.envirosapes.com](http://www.envirosapes.com), to 600 6th-grade students and 50 accompanying teachers. Coalition representatives also hosted a table at the Mill Cove Environmental Area's Earth Day Celebration, along with a diverse group of hunters, environmentalists and outdoor enthusiasts. "Our members have really enjoyed doing public education events and would like to do more of them," says Tomlinson.

In addition to emergency response, public education was deemed to be the most effective source water protection management strategy by the coalition. People learn best when they can easily see impacts. To help local officials and the public visualize key land areas needing protection and grasp the effects of stormwater runoff, the coalition turned to visual tools as recommended by WREN, including source water protection maps showing the recharge areas, and other models, including the EnviroScape® Watershed model, groundwater model, and a new stream table model acquired under the WREN grant.

According to DEP, sediment from unpaved roads is a significant contributor to stream pollution. Tioga County has the greatest number of miles of unpaved roads in the state of Pennsylvania. Recognizing that a clear understanding of proper maintenance and placement of these roads would be important and would greatly benefit the county's surface water supplies, the Coalition purchased a stream table model under their WREN Grant to complement the EnviroScape® Watershed model already in use. According to Tomlinson, "The impacts of agriculture and dirt roads cover most all of the county due to our rural nature, and greatly affect our source water protection areas. We thought being able to demonstrate to municipal officials and landowners how erosion and farming activities affect our water suppliers would be really helpful. A lot of our water suppliers are fed by surface waters and those impacts really add up."

Coalition member Susan Keck, also secretary/treasurer of the Borough of Wellsboro, has these words of encouragement for anyone interested in protecting their community's



**SEEING IN BELIEVING** Public education occurs as a result of models purchased, and the impacts of agriculture and dirt roads as well as erosion and farming activities can be seen

drinking water. "Don't delay – start today! The sooner you get started," she continued, referring to SWP planning and coalition formation, "the sooner you'll be protected."

Tomlinson offered advice on partnerships: "The more partnerships you have, the easier it is to start programs, and the less scary it is. Getting everyone together has provided momentum to move forward, rather than leave the [SWP] plans sitting on the shelf."

In addition to the new coalition in Tioga County, fruitful source water protection partnerships are proving to be an excellent way to protect affordable clean water for future generations. As the Tioga County Source Water Protection Coalition is finding, working together to put source water protection plans into action will offer long term benefits to the health, safety and welfare of Pennsylvania residents. They hope their example will inspire others to work together to make a difference and ensure there is enough clean water for Pennsylvania families. **(B)**

**For More Information**

For information on DEP's Source Water Protection Technical Assistance Program (SWPTAP), please visit [www.sourcewaterpa.org](http://www.sourcewaterpa.org), where a fact sheet on the SWPTAP program can be downloaded. In addition to WREN, Pennsylvania Rural Water Association ([www.prwa.com](http://www.prwa.com)) is also a valued Source Water Protection Partner, and offers source water protection assistance to medium and small public water systems. For more information on the Tioga County EMS 911 GIS project, please

contact Scott R. Zubek, Director, Tioga County GIS, at [szubek@tiogacountypa.us](mailto:szubek@tiogacountypa.us).

To get started in your community, subscribe to the free WREN newsletter at <http://wren.palwv.org> to stay tuned to news and resources, or contact Julie Kollar, WREN Project Director, at [juliekwren@verizon.net](mailto:juliekwren@verizon.net). Check the WREN website for water resources and information about WREN water education grants for communities in Pennsylvania and to download WREN's free Groundwater Primer for Pennsylvanians.

**About WREN**

The Water Resources Education Network (WREN) is a project of the Citizen Education Fund of the League of Women Voters of Pennsylvania. WREN works to help communities across Pennsylvania protect and improve our most precious natural resource, our water. WREN is a nonpartisan informal collaboration of organizations and public officials working for the protection and management of Pennsylvania's water resources, both surface and ground water, through community education and informed policy-making. WREN provides training and grants for local coalition building to promote community awareness and development of public policies necessary to protect Pennsylvania water resources. Since 1992, the WREN Project has awarded over \$2 million in mini-grant funding to over 350 community partnerships working to safeguard clean water today and for future generations in Pennsylvania.