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WREN March 2013 E-NEWS FEATURE



Reading Area Water Authority Takes a Coupled Approach to Source Water Protection and Watershed Protection

By Lori Burkert, RAWA Watershed Consultant

The [Reading Area Water Authority](#) (RAWA) provides drinking water to over 125,000 people in Reading, Pennsylvania, and several surrounding communities. The water source is [Lake Ontelaunee](#) in the Maiden Creek watershed. The Maiden Creek is a major branch of the Schuylkill River, which flows south to provide drinking water for the City of Philadelphia. Lake Ontelaunee's watershed is approximately 216 square miles, and includes portions of 24 municipalities in Berks and Lehigh Counties.

In 2012, RAWA marked the fifth anniversary of the adoption of its source water protection plan for Lake Ontelaunee and the Maiden Creek watershed. The goal of source water protection plans is to reduce the level of impurities in raw water from rivers, lakes and groundwater used for drinking water to combat waterborne disease and protect human health. During the early stages of RAWA's source water protection program (SWPP), members of the SWPP steering committee recognized that the plan offered a great way to improve the Maiden Creek watershed "from the source to the tap." This clear vision about the strong link between a healthy watershed as an essential tool to produce healthy drinking water, helped guide the planning process to RAWA's formal Source water protection plan and focused energy to put the plan into action.

As highlighted in WREN's [Winter 2013 Water Policy News](#), **RAWA was recently awarded the 2013 American Water Works Association Exemplary Source Water Protection Award for large water systems in North America.** "We at RAWA are very proud of this accomplishment and recognition, and hope that this accomplishment shows the dedication that is instilled into the day-to-day tasks that we do here, and shows that efforts are continually being made to keep Reading Area's water safe," said Dean Miller, RAWA's Executive Director.

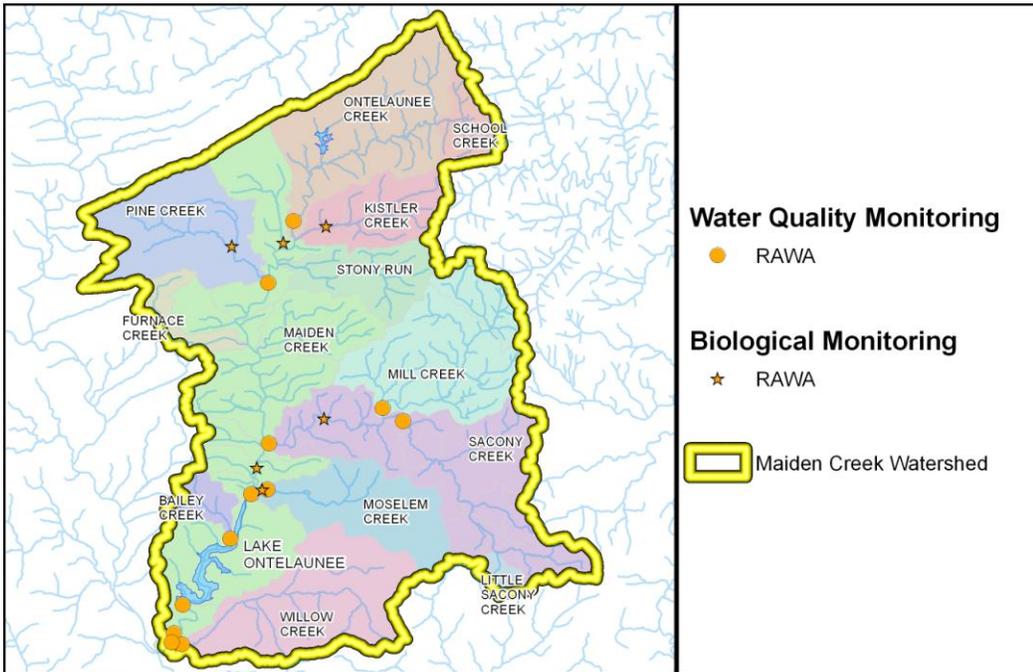
Since 2007, RAWA has carried out many of the drinking water protection plan's recommendations. They:

- formed a Source Water Protection team
- taught people to quickly report spills using road signs (photo at right)
- tested and monitored water all over the watershed
- helped protect area streams by planting more than 1,000 trees on RAWA and City of Reading lands each year
- removed invasive plants along stream buffers
- taught residents, farmers, and area school students about how their daily actions can help keep drinking water pure
- and planned for dredging a portion of Lake Ontelaunee.



This transportation sign was installed where a major road enters the watershed.

Recognizing that source water protection is an ongoing process, the protection plan and steering committee are being refreshed to tackle future challenges. Improved water monitoring, new approaches to watershed education, water availability and new source evaluation, working cooperatively with municipalities, and emergency response planning are all efforts that are underway.



Miller oversees a team of RAWA staff, and consultants from Miller Environmental, Inc. and SSM Group, Inc., which is dedicated to reducing threats to Lake Ontelaunee. RAWA staff are doing weekly water quality monitoring at ten stream locations throughout the watershed.

A detailed water quality report is being prepared using the first five years of results. Additional testing was recently added in areas that show signs of both damage and

This map of the Maiden Creek watershed shows the water quality and biological monitoring locations (macroinvertebrate) that RAWA maintains.

improvement. RAWA also provides help each year to the Berks County Conservancy to support the planning and implementation of agricultural best management practices (BMPs) on farms throughout the watershed. Recent projects in the Sacony Creek watershed, a branch of the Maiden Creek, have achieved reduced sediment reaching the creek, by keeping soil in place through better streambank stability. It is important to keep sediment out of drinking water sources to help ensure proper disinfection against water borne diseases.



Lyn O'Hare, Water Resources Specialist with SSM Group, and Dean Miller, Executive Director of RAWA, discuss potential future watershed projects prior to the start of the annual source water protection steering committee meeting in February 2013.

Checking for macroinvertebrates (insects that live in the streams and lakes) is done twice a month at multiple stations throughout the watershed. Jesse Goldberg, Environmental Specialist for Miller Environmental stated, "The macro work in the Lake Ontelaunee watershed is being performed to supplement our water quality sampling. The diversity, abundance, and pollution tolerance of the macroinvertebrates that are living in each of the subwatersheds are indicators of how good, or poor, the water quality is in that particular stream. We also use the data to determine whether Best management practices work performed at locations upstream of our sampling stations has resulted in improved water quality."

One challenge is that the upstream watershed area that supplies RAWA's drinking water does not match up with the

downstream area where the bulk of its customers live. Miller sees “an opportunity to bridge the gap in awareness between watershed residents and the service area customers.” To better connect with residents, RAWA is looking at ways to do public education with the Reading School District for fall 2013. “RAWA's education initiatives are undertaken in order to provide the public with information about the importance of having a safe and reliable supply of water that can be treated and delivered for public consumption. RAWA believes that by holding discussions with students in classrooms, and/or taking college students out on a stream assessment, education of our youth is integral in ensuring that our water supply is safe for future generations,” said Goldberg. RAWA is part of the [City of Reading RiverFront Park Earth Day Celebration](#) to spread the word about ways to protect drinking water. The Authority is beefing up online information to the public, and adding pages about drinking water care to their website.



These before (left) and after photos show a Berks County Conservancy stream rehabilitation project on a local farm in 2009. The project was partially funded by RAWA.

Quick response to transportation spills is an important part of drinking water protection. RAWA is part of the [Berks County Local Emergency Planning Committee](#) (LEPC) and the [Philadelphia Water Department's Delaware Valley Early Warning System](#) (DVEWS) to share information about spills and emergency events in the Schuylkill River Watershed. “We are providing specialized maps to emergency responders showing time-of-travel throughout the watershed under different conditions so they may better react to potential contamination events,” said Lori Burkert, Water Resources Specialist for SSM Group.

If you are interested in learning more about any of the RAWA initiatives, please contact Mr. Jesse Goldberg of Miller Environmental, Inc. at JGoldberg@miller-env.com.

RAWA was the recipient of a WREN Source Water Protection Education Grant during 2008-2009. Click the link to read more about the project: <http://wren.palwv.org/projects/berks.html>. To learn more about drinking water protection, please go to www.sourcewaterpa.org.



Lori A. Burkert, is a RAWA Watershed Consultant. She is currently employed as a water resource specialist by the [SSM Group, Inc.](#) in Reading, PA. She can be reached at (610) 621-2000 or lori.burkert@ssmgroup.com.

