Potomac River Basin Drinking Water Source Protection Partnership

2012 Annual Report

www.PotomacDWSPP.org

Letter from the Co-Chairs

For each of us involved with providing water to the nearly 5 million people throughout an 11,000-plus square mile watershed, we are bound by a commonality – our reliance on the Potomac River as a source of water supply. As simply stated by Loren Eisley in his 1957 book "The Immense Journey," water is a magical resource that is literally life giving – cooling, cleansing, restoring, and soothing. Our role as water professionals in providing life's most precious resource and the responsibility that we have to public health, safety, and our economy cannot be understated.

Water professionals recently acknowledged the 40th anniversary of the Clean Water Act, passed by the U.S. Congress on October 18, 1972. The nation has experienced tremendous achievement in reducing water pollution since then, particularly with significant advancements and major investments in wastewater treatment. It's hard to believe that in 1972 most municipal wastewater plants provided only "primary" treatment. For the most common metrics of water quality, such as nutrients, sediment, and oxygen-demanding substances, water quality improvements in the Potomac River have been dramatic.

Despite these remarkable achievements, our water supply sources face emerging challenges, including the presence of trace quantities of contaminants that we didn't know even existed 40 years ago, let alone had the analytical techniques to quantify. Who could have foreseen that changes in energy exploration and extraction techniques would lead to interest in developing energy projects in the Potomac basin? We can only assume that we will see more substantive changes over the next 40 years. The Partnership will enable us to better prepare and respond to these new and emerging issues in the future.

2012/13 Metro Area Water Utility Chair Chuck Murray passes the gavel to Bill Toomey on behalf of 2012/13 Government Committee Chair Walt Ivey who will chair the full Partnership in 2013.

As the Partnership enters its eighth year, we are pleased to provide this update on our activities. Among this year's highlights are:

- Our Early Warning and Emergency Response workgroup, with support from U.S. EPA Region 3, simulated the impact of a major transportation incident and contaminant release into the Potomac River.
- Our Agricultural Issues workgroup developed a draft outreach strategy to allow us to better communicate the benefits of source water protection to farmers and other agricultural interests throughout the basin.
- Our Urban Issues workgroup continued to focus on threats from winter-weather salting applications, and recently held an informational webinar on best management practices to minimize the impact of deicing activities on the Potomac River.
- Our Emerging Contaminants and Agricultural Issues workgroups sponsored an information session on a recent USGS study using landscape analysis to

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identify potential endocrine disruptors from various land-use activities in basin.

- Our Government Committee made a significant effort to engage water suppliers in upstream portions of the basin who may not be aware of our work or have the ability to participate in our quarterly meetings and workgroup activities. Our outreach meeting on the Partnership and technical activities at Shepherd University received excellent feedback from those utilities who participated.

> *"If there is magic on this planet, it is contained in water."*
> *- Loren Eisley, "The Immense Journey"*

The Partnership has made strides in understanding the threats to our source of drinking water supply, the Potomac River. Thank you to all of the individuals that have participated in the Partnership's workgroups and committees throughout the year to make it a success. Through the continued commitment and hard work of our members to protect the Potomac River as a source of drinking water, we will build on these efforts in the coming year.

Charles Murray
General Manager, Fairfax Water
2012 Metro Area Water Utility Committee Chair

Walter Ivey
Director, Environmental Engineering Division
West Virginia Department of Health and Human Resources
2012 Government Committee Chair

About DWSPP

The Potomac River Basin Drinking Water Source Protection Partnership is a voluntary alliance of water utilities and state, interstate, and federal authorities working to protect sources of drinking water in the Potomac River basin. Established in 2004, 20 organizations are official members of the Partnership with many others participating in Partnership meetings, workshops, and activities. Partnership priorities include:

- Identifying the sources of contaminants entering the Potomac River.
- Improving our understanding of the impact these contaminants have on drinking water.
- Developing strategies to minimize the presence of the contaminants and their effect on drinking water.

Mission Statement

Our mission is to serve as a cooperative and voluntary partnership working toward the goal of improved source water protection within the Potomac River basin in recognition of the vital role of the river and its tributaries in supplying drinking water to millions of people and in support of the multi-barrier approach to safeguarding drinking water supply for public health.

Member Organizations

City of Frederick, Md.
City of Hagerstown, Md.
City of Rockville, Md.
D.C. Department of the Environment
Fairfax Water, Va.
Frederick County, Md.
Interstate Commission on the Potomac River Basin
Loudoun Water, Va.
Md. Department of the Environment
Pa. Department of Environmental Protection
Town of Leesburg, Va.
U.S. Environmental Protection Agency, Region 3
U.S. Geological Survey
Va. Department of Environmental Quality
Va. Department of Health
Washington Aqueduct, U.S. Army Corps of Engineers
Washington County, Md.
Washington Suburban Sanitary Commission, Md.
W.Va. Department of Health and Human Resources
W.Va. Department of Environmental Protection

Members practice coordinated response to hazardous spill threat

An earthquake, train derailment, and power outages – all at the same time. This is what the Partnership's water utilities and emergency response agencies were up against during an intense three-day exercise organized by the Early Warning and Emergency Response workgroup. With funding from the EPA Region III, the consultant Horsley Witten Group, Inc. assisted the Partnership, the Interstate Commission on the Potomac River Basin (ICPRB), and the Metropolitan Washington Council of Governments (MWCOG) in the planning, execution, and follow-up to the exercise.

More than 80 participants from 26 water utilities and government agencies in the Potomac basin played out this scenario as if it were actually occurring. The design of the exercise was meant to test communications, practice public message coordination, and evaluate information systems designed to assist utilities during an incident affecting multiple jurisdictions in the basin.

Through the process of planning and conducting the exercise a number of improvements were made to communication protocols. These included:

- Updated and verified contact information in the Regional Incident Communications and Coordination System (RICCS) and for ICPRB's spill travel time estimates;
- practiced using chemical information databases that are critical to understanding the nature and threat of a spill;
- reinforced benefits of sharing data, knowledge and information, and resources between individual utilities and between utilities and government agencies;
- displayed modeling, communication, and collaboration capabilities to utility and response communities;
- some utilities used the exercise to practice internal response and communications procedures;
- ICPRB improved communication of travel time estimates and model parameters;
- water suppliers practiced coordinating messages about water supply emergencies to the media, customers, and general public; and
- determined who received National Response Center spill notifications and how notification could be passed to other agencies.

The exercise also drew attention to procedural gaps and areas for improvement, including a need to:

- create a standard form for recording and sharing data between agencies, preferably through a web-based platform;
- develop a framework for data collection that would include potential sampling locations that could help verify the travel characteristics of a spill event;
- obtain a list of the most common chemicals transported on the railways in the region;
- devise alternate means for communicating in case phone and internet systems are down;
- determine means for water quality testing when intakes have been shut down to avoid taking in the spilled material; and
- better coordinate with regional health departments.

Horsley Witten's Carl Simons (left) and Will Keefer in the spill exercise simulation center. They ran the exercise over the course of three days providing scenario injects and playing the role of various actors in spill response efforts. Image source: Horsley Witten.

The workgroup and individual organizations have already begun addressing issues raised during the exercise. For instance, at the Partnership's summer meeting attendees learned about the National Capital Region Geospatial Data Exchange. This is a tool that would allow members to share data and information, especially that with spatial references, with a group of specific individuals. Additionally, ICPRB and MWCOG have had several discussions about how to improve their coordinated response and how to best support the region's water suppliers.

How will you be notified of a spill?

Two resources are available to water suppliers in the basin. RICCS is an email and text messaging service for emergency notification. ICPRB also notifies water systems of a spill and provides estimates of travels times to downstream intakes. To learn more, contact Karin Bencala @ kbencala@icprb.org.

Urban Issues workgroup spreads road salt message

Road salts and deicing chemicals were identified as a potential contaminant by several Partnership water utilities in their Source Water Assessments completed in the early 2000s. Subsequently, when the Partnership drafted its first strategic plan in 2005, road salts were named as a priority issue. Since then, the Urban Issues workgroup has continued efforts to educate and inform the public and transportation professionals on this issue.

When deicing materials are applied to our roads and walkways, the chemicals eventually make their way into streams and ultimately to water supply systems. Photo source: EPA Region 3

In September 2012, the workgroup sponsored a webinar: "Minimizing the Impact of Highway Snow and Ice Control on our Water Supplies." The webinar presented information to assist winter-weather professionals in evaluating winter maintenance materials and operations to minimize the impact of snow and ice control programs on our sources of water supply. The workshop aimed to educate local and state highway departments, public works officials, and agency staff with responsibility for winter-weather maintenance on the latest best management practices (BMPs).

Greg Prelewicz of Fairfax Water, Chair of the Urban Issus workgroup, provided an overview of the Partnership and discussed the impact of road salts and deicers on the Potomac River. He also highlighted operational BMPs used in other areas of the United States.

Sandi Sauter with the Maryland State Highway Administration (SHA) provided an overview of Maryland's Statewide Salt Management Plan, which provides a framework for highway agencies to deliver safe, efficient roadway systems in a cost effective manner while recognizing their obligation to do so in the most environmentally sensitive manner practicable.

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Heading upstream - source water protection through collaborative efforts

In April, Partnership members travelled to Shepherd University in Shepherdstown, West Virginia, to meet with representatives of water systems in the basin that are not currently involved with Partnership activities. The purpose of the half-day workshop was to learn from these utilities about the water quality challenges they face and how the Partnership might be able to provide support.

The meeting was organized by the Partnership's Government Committee, currently led by Walt Ivey and Bill Toomey from West Virginia's Department of Health and Human Resources. Presentations were provided by a variety of members, representing both large and small utilities and state and federal agencies. These presentations covered the basics of source water protection and the Partnership's efforts, coordinated response to hazardous spills, a recent study on the presence of *Cryptosporidium* in the basin, and available water quality data and information.

Over 40 people attended the meeting, representing 11 systems and various Rural Water associations. Many of these individuals now receive periodic updates and invitations to the quarterly meetings. Feedback following the meeting indicates that there is an interest in attending additional meetings, especially if they focus on specific water quality issues.

Outreach to systems upstream of the Washington, D.C., metropolitan area has long been of interest to the Partnership. This initial meeting is the start of a new effort to engage more systems that use the Potomac River, its tributaries, and associated groundwater resources as a source of drinking water supply. In the coming year the Government Committee hopes to hold a follow-up meeting or target another area of the watershed. We hope that any system that is interested in learning about the Partnership or becoming a member will get in touch with us!

We greatly appreciate the support for the meeting provided by Shepherd University and West Virginia Department of Health and Human Resources.

New effort to tackle agricultural and urban runoff concerns

Since President Obama's signing of Executive Order 13508 on May 12, 2009, the region has been abuzz with acronyms like TMDL and WIP. This Executive Order set into motion a gigantic effort to reduce the amount of sediment and nutrients that enter the Chesapeake Bay. As the Potomac represents a large portion of the Chesapeake Bay watershed and given that sediments and nutrients are targets of source water protection, the Partnership is closely watching this process.

A TMDL, or Total Maximum Daily Load, is in essence a pollution budget for any contaminant of concern in a waterbody. The limit placed on the specific contaminant is meant to ensure that the target waterbody can be used for the purposes identified by a state. These "designated uses" could be anything from recreational to ecological to public water supply.

Under the authority of the Clean Water Act, the U.S. EPA established the Chesapeake Bay TMDL in December 2010, to hold New York, Pennsylvania, Maryland, West Virginia, Virginia, Delaware, and the District of Columbia accountable for limiting the amount of nutrients and sediments making their way into the bay by the year 2025. Specific pollution budgets were subsequently set for sources of nutrients and sediments such as sewage treatment plants, stormwater, and agricultural runoff. Each jurisdiction was also required to develop a WIP, or Watershed Implementation Plan, that lays out specific steps to meeting the pollution reduction goals.

This year the Urban and Agricultural Issues workgroups looked into each Potomac-basin state WIP to learn how they might have synergistic benefits for source water protection. Workgroup members spent a day familiarizing themselves with the tasks Virginia and West Virginia have proposed to meet their TMDL limits.

Each WIP is hundreds of pages long, meaning the workgroups have a long way to go before getting a complete picture of all the projects that will soon be underway in the basin. The ultimate objective is to figure out which proposed actions are most likely to improve observed water quality in source water areas. Once this has been done the Partnership is interested in exploring ways in which it could draw attention to the multiple benefits of such projects.

If you are involved in both WIP implementation and drinking water issues, we would be interested in learning from you! Please contact Urban Issues chair Greg Prelewicz or Agricultural Issues chair Ellen Schmitt.

Advocating a holistic approach to CECs

One of the Partnership's utility members, WSSC, continued to pursue a better approach for managing Chemicals of Emerging Concern (CECs) this year. WSSC staff has been working with the Water Research Foundation (WaterRF) and persistently advocates for a holistic approach to address CECs in lieu of focusing on drinking water as the source of the problem. While WaterRF funded many useful studies over the past five years, the holistic approach did not receive significant attention until recently. Now, WaterRF has established a second five-year Focus Area (FA) on this issue. WSSC participates in the Technical Advisory Committee for this effort and continues to advocate for the holistic approach. The new FA Council met in September 2012 and recommended that WaterRF should "Evaluate the current paradigm used in the U.S. to manage CECs, and identify and evaluate alternative paradigms, with an emphasis on collaboration between multiple sectors, to manage human exposure to CECs" because "CECs are a wastewater, storm water, and agricultural problem. They are not a drinking water problem." With this new direction, hopefully a holistic approach for managing CECs will be developed.

Road Salts, continued from Page 4.

The SHA Salt Management Plan, required by an act of the Maryland legislature, covers the use of salt from its delivery, storage, and handling at salt storage locations to its placement on highways during winter events to post-storm cleanup.

Dr. Scott Koefod of Cargill Deicing Technology reviewed the environmental effects of common deicers and strategies to minimize environmental impacts, namely roadway pre-treatment to reduce overall road salt usage. He highlighted a number of studies that have shown 15% to 40% reductions in overall salt usage through the use of pre-wetting techniques designed to prevent freezing and bonding on the roadway surface.

Thomas Savoie, MWCOG, and Javier Torres, Montgomery County (Md.) Office of Procurement, provided information on regional cooperative contracts available for purchasing roadway salt and deicing materials.

This webinar was part of the workgroup's effort to engage winter-weather and snow-fighting professionals in dialogue about their strategies and approaches to minimizing the impact on our sources of water supply. For more information on this work and to view the presentations mentioned here, go to www.PotomacDWSPP.org.

The Partnership extends a special thanks to MWCOG for hosting and administering the webinar.

An ounce of prevention is worth a pound of cure

This famous phrase of Ben Franklin is still true today and represents source water protection to a tee. The concept and implementation of source water protection has been around longer than treatment – currently the most widely known step in drinking water production. In fact, in the early 1900s, communities created plans to keep drinking water supplies free from raw sewage.

The focus of source water protection remains the same today: Reduce contamination threats to sources of drinking water. While drinking water production has progressed to a multi-barrier approach that involves other components such as treatment and proper distribution, source water protection remains one of the most cost-effective methods for ensuring a safe and plentiful drinking water supply.

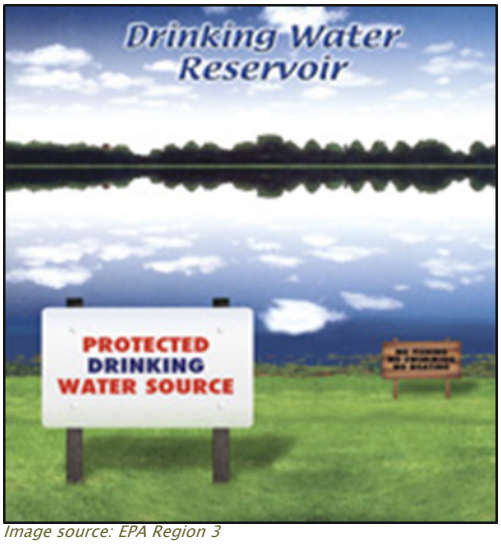

Image source: EPA Region 3

As our society has grown in population and added many industrial advancements, so has the potential for chemicals and compounds to enter the environment, including drinking water sources. Although we have the ability to treat, reduce, and even remove many water contaminants, it is not in our best interest to rely solely on this water production step. The main concept of source water protection is to protect future drinking water sources before contamination occurs. Experience has shown us that treatment without active source water protection increases the expense and potential complications of providing the public a safe product.

Source Water Protection is everyone's issue. It is not solely the responsibility of a water system, just as the water system is not the sole benefactor of source water protection efforts. There exist many types of preventive measures that can help to reduce contamination threats. Communities have successfully used the following source water protection actions: land use ordinances, best management practices that reduce contaminant runoff, public outreach on the proper handling and storage of chemical products or wastes. To learn about other ways in which communities are protecting their drinking water supplies, go to http://water.epa.gov/infrastructure/drinkingwater/sourcewater/protection/casestudies/index.cfm.

Potomac River Basin Drinking Water Source Protection Partnership

For Life, For Health, Clean Water

Interested in learning more? Contact:
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Contact information for the workgroups is available on our website.

We're on the Web!

Visit us at:

www.PotomacDWSPP.org