Strategic Plan 2011 Update
Potomac River Basin Drinking Water Source Protection Partnership

Reaching Out

The Reaching Out workgroup (ROW) informs and educates the public and water professionals about DWSPP activities and initiatives, supporting the activities of the other workgroups. The ROW also produces materials and conducts outreach activities to help move DWSPP toward its goals. The group can also help to attract new membership and input to DWSPP. Much of the group's work is continuous in nature.

Objectives

- Assist DWSPP workgroups in promoting and educating others on their activities and projects.
- Promote DWSPP membership expansion.
- Promote DWSPP through the annual report and other efforts.

Activities

On-going:

- Maintains DWSPP web presence to publicize activities and keep membership informed.
- Produces an annual report that membership can use as a general information piece both internally and externally.
- Fields information requests from media, public, and membership.

Short term:

- Generic outreach presentation that can be used by members to discuss the Partnership with outside groups.
- Support outreach for workgroup-sponsored activities – crypto webinar, pharmaceutical take back events.

Long term:

- Outreach to other water supply/management agencies aimed at increasing membership.
- Produce recruitment materials to increase membership.
- Arrange a directory of members willing to be interviewed by media or give talks about source water protection to citizens groups or agency staff.

Measures of Success

- Partnership efforts to conduct outreach and informational meetings are supported by the workgroup.
- Directory of available experts for interviews at member organizations is compiled.
- The annual report is available by the winter meeting of the following work year.
- The website is up to date with Partnership activities and resources for more information on priority issues.

Emerging Contaminants

The role of the Emerging Contaminants workgroup is to support the Partnership by tracking and reporting on findings of research and monitoring of persistent and newly identified threats posed to source water quality in the Potomac River basin. A primary focus of the workgroup shall be on endocrine disrupting chemicals (EDCs), pharmaceuticals and personal care products (PPCPs), and on other chemicals or contaminants of concern– their identity, sources, distribution, possible human and ecological health effects, treatability, and control through management practices to limit their occurrence in the Potomac River and its tributaries.

Objectives

- Identify emerging contaminants that occur (or have a reasonable potential to occur) in the Potomac River basin. Monitor research on detection methods, surrogate indicators, and occurrence.
- Identify potential sources of identified priority emerging contaminants.
- Identify patterns of contaminant distribution and persistence, especially downstream of identified point sources.
- Compile information on human and ecological/environmental health effects, and epidemiological/toxicological studies to understand health significance and relative risks posed by emerging contaminants in drinking water.
- Identify control measures and best management practices to reduce or minimize occurrence of emerging contaminants in the Potomac River and its tributaries.
- Develop a communications strategy to educate Partnership members and stakeholders on relative risks of emerging contaminants to drinking water quality and on control measures and best management practices.

Activities

On-going:

- Research Tracking:
    - Track research on identity, sources, distribution, possible human health effects, treatability, and control of priority emerging contaminants.
    - Comment, as appropriate, on proposed research studies on emerging contaminants.
    - Track, support, and participate in emerging contaminant monitoring programs that may be undertaken by government agencies or utilities, if of value to the Partnership.
    - Track Water Research Foundation (WaterRF) projects related to understanding and responding to emerging contaminants.
- Permit Tracking:
    - Track NPDES permits that may result in emerging contaminants being discharged into source waters; when appropriate, consider reaching out to dischargers to discuss source water protection opportunities.
- Information Exchange:
    - Support development of factual basis for Partnership or individual members' comments on pending legislation, regulations, guidance, etc. related to emerging contaminants.
    - Facilitate coordination of efforts and communication of unpublished research among interested agencies and individuals.
    - Update workgroup's webpage annually or more frequently; inform Partnership via email and periodic website updates of upcoming conferences, symposia, seminars, workshops, and webcasts on relevant themes.

Short term:

- Continue participation in WaterRF research project #4169, Water Utility Framework for Responding to Emerging Contaminant Issues, to ensure the Potomac case study is prominent and successful.
- Track developments on:
    - UCMR3 (hormones, etc.)
    - Hexavalent chromium
    - Perchlorate
    - Hydrofracking (bromides, radionuclides, etc.)

- Track algae issues and changing conditions that may have water treatment ramifications (cyanobacteria, etc.).
- Continue tracking significant legislative efforts related to safe drug disposal for applicability within the Potomac River basin.
- Track new efforts by the federal government to transform the way that industrial chemicals are regulated.

Long term:

- Approximately every 5 years sponsor a seminar or workshop on current research. The next Emerging Contaminants workshop is planned for 2012 or 2013 to update research information and discuss current issues.
- Periodically update FAQs on Emerging Contaminant workgroup webpage.
- Support the Reaching Out workgroup in updating the Partnership's website and developing public communications tools for responding to emerging contaminant issues.

Measures of Success

- Maintain list of emerging contaminants known to occur in the river with citations of data source/paper.
- Partnership members understand risks posed by emerging contaminants to source water quality in the Potomac River basin and control measures for reducing those risks.
- Members either have individual or collective strategy for communicating emerging contaminant information to stakeholders.

Urban Issues

This workgroup is intended to position the Partnership to better communicate drinking water needs in the Potomac River basin to the agencies who oversee implementation of point and non-point source discharges of urban runoff, including Municipal Separate Storm Sewer (MS4) programs. These agencies may include state agencies, local jurisdictions, or regional planning districts or planning commissions. This workgroup shall focus on urban stormwater including urban and highway runoff and other point and non-point discharges associated with storm activity. The goal of this workgroup is to promote implementation of better stormwater management and better integrate Clean Water Act and Safe Drinking Water Act water quality programs to protect sources of drinking water in the Potomac. The workgroup's activities include ongoing efforts to evaluate the impact of road deicers and salts on the Potomac. The workgroup will periodically update information on urban land use trends and on current stormwater management practices throughout the basin. This workgroup will also develop and maintain a list of recommended urban stormwater practices to be used for advocacy throughout the watershed.

Objectives

- Improve communication between appropriate urban stormwater agencies to both educate Partnership members on urban stormwater issues in the Potomac River basin and to educate agencies on drinking water concerns.
- Advocate for implementation of management practices that will better protect drinking water in the Potomac River basin.
- Support relevant agencies in obtaining funding to implement projects where applicable.

Activities

Short term:

- Investigate and report on projected trends of urban areas in Potomac River basin. Obtain currently available information on projected land use, specifically focusing on urban and suburban areas.
- Characterize currently established stormwater management requirements in the Potomac River basin. Obtain information from state stormwater agencies to characterize how stormwater is managed within various areas of the Potomac River basin.
- Prioritize communities with which to begin dialogue. A small number of communities should be identified as priorities, based on proximity, density, potential for protection, or other parameters.
- Investigate best management practices regarding use of deicing chemicals. Appropriate agencies will be contacted to determine what kinds of chemicals are used, whether there are alternatives that may reduce the risks to water supplies, and whether there are best management practices that can be applied to improve water quality.

Long-Term:

- Meet with priority jurisdictions to begin dialogue and exchange information. The purpose of the initial meetings will be to inform the jurisdictions about the Partnership goals, and educate the Partnership members on stormwater issues for those communities.
- Develop recommendations for urban stormwater management in coordination with state agency stormwater staff.
- Advocate for implementation of recommended stormwater practices.

Measures of Success

- Provide presentation to Partnership on trends and priorities.
- Develop recommendations for stormwater management practices.

Agricultural Issues

The Agricultural Issues (Ag) workgroup was formed to take an active role in building alliances with the agricultural community in order to minimize water pollution in the region's sources of drinking water. The Ag workgroup will work primarily with state and local academic institutions and agencies that can provide technical, extension, and veterinarian support. One of the Partnership's founding workgroups, the Pathogen's group, identified Cryptosporidium *as the most significant pathogenic public health threat to water suppliers in the Potomac. After the completion of the* Cryptosporidium *Source Tracking Project in 2008, which identified the significant sources of* Cryptosporidium *in the basin, the Pathogen and Ag workgroups worked together to develop an educational outreach initiative to raise awareness of the links between agriculture,* Cryptosporidium*, and drinking water.*

The Agricultural workgroup's central focus is on Cryptosporidium *and developing a message to convey the importance of preventing this pathogen from entering source waters. However, the workgroup's interests extend to the prevention of other difficult-to-treat drinking water contaminants (e.g. Phosphorus, pesticides, and pharmaceuticals) from agricultural land as well. One of the workgroup's main challenges is to determine the most effective methods to engage the agricultural community. The Ag workgroup's long term plans include continuing to help the Partnership better communicate drinking water needs in the Potomac River basin and to promote implementation of improved source water protection practices in agricultural areas.*

In 2011, the Pathogens workgroup was officially dissolved with pathogen issues absorbed by the Ag Issues and Urban Issues workgroups.

Objectives

- Develop a better understanding of the pathogen, *Cryptosporidium*, and other drinking water contaminants that originate from agricultural land (e.g. Phosphorus, pesticides, and pharmaceuticals), and methods for controlling their introduction to the public water supply.
- Identify control measures and best management practices to reduce or minimize agriculturally related drinking water contaminants in the Potomac River basin.
- Develop an outreach strategy to educate the Potomac watershed agricultural community and other interested parties about agricultural drinking water contaminants and existing pollution reduction measures.
- Advocate for the implementation of management practices that will better protect public drinking water sources in the Potomac River basin.

Activities

On-going:

- Look for outreach opportunities at existing workshops, in-service trainings, and agricultural events in the Potomac River basin.
- Work with the Emerging Contaminants workgroup to track research related to drinking water contaminants from agricultural sources – review academic, industry, and government publications and reports; and attend conferences, seminars, symposia, workshops, and webinars.
- Work with the Reaching Out workgroup to continue to add relevant information to the Potomac DWSPP, Ag workgroup webpage.
- Identify and contact relevant agencies and stakeholders interested in the goals of the Ag workgroup for building alliances focused on agricultural sustainability and source water protection.

Short term:

- Promote the *Cryptosporidium*, Cattle & Drinking Water webcast; evaluating the feedback provided by webcast participants.
- Coordinate with the Ag Advisory Committee to create an outreach strategy for the Ag workgroup. The Ag Advisory Committee was formed in 2010 and consists of various experts in the agriculture sector who advise the workgroup.

- Begin implementing aspects of the outreach strategy with an initial focus on communicating about *Cryptosporidium* issues and appropriate best management practices (BMPs).

Long term:
- Continue to promote the use of control measures and BMPs to reduce agriculture-associated drinking water contaminants in the Potomac River basin.
- Continue to implement the workgroup's outreach strategy.
- Work with the Urban Issues workgroup to track several regional programs and initiatives that may impact source water protection efforts in the Potomac basin, including the federal Chesapeake Bay TMDL and associated State Watershed Implementation Plans (WIPs).
- As necessary, solicit source water quality data from Potomac DWSPP partners that can be submitted to academic institutions and agricultural agencies to increase awareness of source water protection in the Potomac River basin.
- Monitor research efforts regarding drinking water contaminants from agricultural landscapes in order to better understand the movement of contaminants in the environment and their sources.

Measures of Success

- Complete outreach strategy with the assistance of the Advisory Committee.
- Implement aspects of the outreach strategy in the Potomac River basin.
- Increase the number of partners interested and knowledgeable in protecting drinking water from agriculturally related contaminants.

Disinfectant By-Product (DBP) Precursors

Disinfection-by-products (DBPs), generated when a disinfectant such as chlorine reacts with organic matters (the precursors) in water, are considered potential carcinogens and are strictly regulated under the Safe Drinking Water Act. The current practice takes the precursors as a given and attempts to lower the DBP formation via treatment steps. This workgroup proposed that limiting precursors in raw water, via source water protection, may provide another option for limiting DBPs in finished water.

Objectives and Activities

The workgroup's goal was to work with the Water Research Foundation (WaterRF), with a hope that the WaterRF would pursue research with the following objectives:

- To assess the relative contribution of different watershed sources of precursors (i.e., land-based/allochthonous vs. in-river/autochthonous) to formation of the DBPs in finished water.
- To assess whether source water protection measures targeted at the precursors sources would be feasible and cost-effective.
- To pursue a case study if the research findings warrants a follow up.

The workgroup submitted a research proposal to WaterRF based on the above objectives, with Potomac River watershed as a case study along with some limited funding support from the WSSC. WaterRF declined to fund the proposed research in light of its more critical research needs, limited funding, and questions about the proposal's potential for success.

However, two water utilities came up with considerable funding of their own to support similar Water Research Foundation studies in their watersheds. The first project, being conducted by the University of Colorado and the City of Fort Collins, Colorado, aims to characterize the source of organic matter that contributes to DBP formation, primarily focusing on the land based sources of DBP precursors.

Another group, led by U.S. Geological Survey, focuses on investigating water-based organics, as well as developing techniques to rapidly identify the characteristics of organic matter in a reservoir to better control DBPs.

The WSSC is participating in both projects in an advisory role. Per our recommendation, the two teams have included treatability studies in their scope of work, with the goal of steering them to produce practical tools for DBP control. The total budget for these two projects is $653,490, with $230,000 provided by WaterRF and the remaining $423,490 by those who proposed the projects. The projects are anticipated to be completed by 2012.

The DBP workgroup will continue to be involved in and monitor the progress and findings of these two projects in order to assess their applicability to our region and to determine if any additional projects may be needed for the Partnership.

Early Warning /Emergency Response

This workgroup is intended to better prepare the Partnership's member utilities to respond in the event of a spill or other incident that affects their water supplies. The workgroup also will open dialogs with emergency response agencies and with operators/owners of significant hazardous waste sources to improve the mutual understanding of water supply vulnerabilities and emergency response preparedness.

Objectives

- Ensure that an emergency communications system and protocol reflecting the specific needs of the water supply community are in place and understood.
- Establish a relationship with the petroleum pipeline industry, and others when identified, to facilitate a mutual understanding of hazardous material transportation procedures and risks to water supply.

Activities

Short term:

- The Metropolitan Washington Council of Governments (MWCOG) has developed the Regional Incident Communication and Coordination System (RICCS) to facilitate communications in the event of emergencies. RICCS allows registered users to notify others of significant events through a centralized system that delivers messages to email addresses, cell-phones, and pagers. For most types of emergencies, the RICCS system is confined to the immediate Washington, D.C., metropolitan area (D.C. metro area) that includes MWCOG's member jurisdictions. However, because of the upstream-downstream connection of the Potomac River and its tributaries as the area's water supply source, the workgroup will work with MWCOG to enroll Partnership members in the RICCS water group regardless of their location.
- The EW/ER workgroup will work with MWCOG to get features added to the Water/Wastewater Agency Response Network (WARN) that will enhance its utility to the Partnership for communication in the event of an emergency.
- Open a dialog with Colonial Pipeline to (a) educate that company of the water supply vulnerabilities to a pipeline spill event; and (b) educate DWSPP members about Colonial Pipeline spill prevention and response capabilities and procedures.
- Obtain DWSPP participation on the Regional Response Team and Area Committee.
- The Partnership will maintain a one-page summary of emergency communications procedures for distribution to water utilities. The protocol will reflect the emergency plan developed for the D.C. metro area by MWCOG, with any needed modifications to accommodate the larger coverage of the Partnership.

Long term:

- An enhanced water quality monitoring system can provide early warning of contamination events before the materials reach water supply intakes. The Partnership will investigate the feasibility of developing an enhanced monitoring system.
- Establish contacts with petroleum pipeline industry and other industries as needed.
- To improve DWSPP partner readiness to respond to emergencies, hold periodic emergency response exercises.

Measures of Success

- Increase participation of upstream water utilities in the RICCS and WARN systems.
- Distribute concise emergency communication procedures.
- Establish contact with petroleum industry.