AWC CALL FOR MEMBERS

Source Water Protection Web Platform Working Group

June 2020

Background

Albertans' quality of life depends on a healthy, secure, and sustainable water supply for communities, the environment, and the economy. Population growth, development, and climate variability continue to stress water supplies and the health and well-being of Albertans, the economy, and aquatic ecosystems. Source water is untreated, raw water from surface or groundwater sources used for drinking water or other uses. Source Water Protection (SWP) is a risk management process designed to maintain or improve the conditions of water through proactive and collaborative identification, validation, assessment, and management of risk.

In 2018, the Alberta Water Council (AWC) kicked off a project team to provide guidance on "Protecting Sources of Drinking Water in Alberta". The project surveyed public and private water systems and assessed SWP practices, processes, risks, and initiatives in Alberta. A jurisdictional scan was completed to examine SWP approaches in selected areas of North America and Australia. A resulting "Protecting Sources of Drinking Water in Alberta" guide stipulated steps for drinking water providers to take when undertaking SWP planning.

The results of this project indicate a lack of awareness, data, tools, training, funding, and expertise as well as the need for a more collaborative approach between stakeholders in Alberta. Several concerns over perceived risks to drinking water sources were identified including risks from extreme weather (e.g. floods, drought), development pressures, stormwater, algal blooms, industry, recreation, and livestock.[1]

Although Drinking Water Safety Plans (DWSPs) are mandatory for municipalities in Alberta, they often lack the attention and detail needed to effectively assess and mitigate risks to drinking water sources. For example, the DWSPs are often lacking information and validation of potential contamination of drinking water sources from adjacent land use activities and operations. The guide to "Protecting Sources of Drinking Water in Alberta" developed by the previous project team is a first step in providing direction for drinking water providers on SWP planning. Several communities have voluntarily developed SWP plans, while several tools exist in Alberta to support SWP, but there is no centralized inventory of these tools online. Furthermore, most municipalities and non-municipal drinking water providers in Alberta do not have the tools or resources in-house to do SWP on their own, particularly small and rural communities. Without further collaboration and the development of SWP tools and resources, SWP efforts will continue to be ad hoc, and lack the consistency required to manage source water risks into the future.

[1] Alberta Water Council. 2019. Protecting Sources of Drinking Water in Alberta. Available online: https://awchome.ca/Projects/CurrentProjects/ProtectingSourcesDrinkingWater/tabid/217/Default.aspx

There is a need to develop and deliver a suite of practical tools and resources to assist drinking water providers and local decision makers in Alberta to understand, assess, and mitigate risks to their drinking water sources. Additionally, there is a need to integrate SWP approaches and encourage greater collaboration between drinking water providers and stakeholders through the development of SWP plans that align with local priorities, watershed management initiatives, and regional plans.

The Statement of Opportunity (SoO) was initially presented at the AWC's February 2020 board meeting. After several discussions, members were concerned that project scope and client were unclear. Members cautioned that current capacity constraints being encountered by some sectors need to be considered when developing and rolling out this toolkit. There was consensus to strike an ad hoc group to further flesh out these concerns and bring back a revised SoO for the board to consider.

The ad hoc group was established and met once remotely to discuss the concerns of the board and determine a path forward to revise the SoO. Instead of a toolkit, the group suggested the development and delivery of a SWP web platform. It was proposed that the work could be broken down into two phases: assessment and implementation. The assessment phase would compile and deliver the resources (data and information) required for SWP planning on a centralized web platform including information on 1) delineation of source water areas, 2) available data and information on training on risk assessment, and 3) training to assess source water risks. The implementation phase would focus on how to act on the identified risks through mitigation measures and collaborative partnerships.

At the June AWC board meeting, the revised SoO was presented and there was consensus from members to launch a working group for scoping terms of reference (ToR) for a project team to execute. The draft ToR will be brought forward for approval by the AWC board at a future meeting.

If your sector in interested in participating, please let Anuja Ramgoolam (aramgoolam@awc-casa.ca) know who will represent your sector on the Source Water Protection Web Platform Working Group by **Friday 7 August, 2020.** Should you have any questions, please call Anuja directly at (780) 644-7375. We look forward to hearing from you!

Working Group Membership, Expectations, and Commitment

Description

- Source water protection (SWP) is the proactive mitigation of risks and impacts to water (surface water and groundwater) supplies. It is the first line of defence in a multi-barrier, risk management approach to protect drinking water from contamination and other risks.
- However, most municipalities and non-municipal drinking water providers in Alberta do not have the tools or resources in-house to do SWP on their own, particularly small and rural communities. Thus, without further collaboration and the development of SWP tools and resources, SWP efforts will continue to be ad hoc and lack the consistency needed to manage source water risks into the future.
- The main purpose of this work is to scope ToR for a project team to develop and deliver a centralized web platform that would house the resources necessary to support the development of voluntary SWP plans.
- This project will develop and deliver a suite of practical tools and resources to assist drinking water providers and local decision makers in Alberta to understand, assess and mitigate risks to their drinking water sources. Additionally, the project will integrate SWP approaches and encourage greater collaboration between drinking water providers and stakeholders through the development of SWP plans that align with local priorities, watershed management initiatives and regional plans.

Membership

- Representative of a sector with an interest in this issue (deal makers, deal breakers, implementers).
- AWC Director, Alternate, or another sector representative.
- Meet the expectations and commitments described below, as per the AWC's Process Guidelines.
- Two representatives from each of the AWC's sector groups: Industry, Non-government Organizations, Government, and the GoA and provincial authorities.

Expectations of Representative:

- Represent an organization or sector.
- Come prepared for meetings, (i.e., reading pre-meeting material, completing homework assignments and being able to negotiate on behalf of their sector).
- Make constructive contributions that advance the committee's goals and objectives and help others to do the same.
- Report regularly to their sector.
- Brief their sector's Director and Alternate regularly, including prior to the team's report and recommendations being presented to the Board.

- As appropriate, participate in briefing Directors and Alternates in their broad category.
- Liaise with their sector's participants on the Board and other AWC teams to maximize synergy, ensure coordination, and prevent duplication.
- Follow the rules and principles of consensus decision making.

Commitment:

- Approximately four months.
- Two to three full-day meetings, with some hours required between meetings to review materials (e.g. draft ToR).

Statement of Opportunity: Source Water Protection Web Platform

Background on the issue and why it is important

Ensuring the safety and security of our drinking water sources in Alberta is critical to our public health, economic prosperity and environmental sustainability. Source water protection (SWP) is the proactive mitigation of risks and impacts to water (surface water and groundwater) supplies. It is the first line of defence in a multi-barrier, risk management approach to protect drinking water from contamination and other risks. SWP is used in many jurisdictions as one of the most cost-effective methods to maintain and improve source water quality and quantity.[2]

In 2018, the Alberta Water Council (AWC) formed a project team to provide guidance on "Protecting Sources of Drinking Water in Alberta". The project included surveys of public and private water systems and an assessment of the SWP practices, processes, risks and initiatives in Alberta. A jurisdictional scan was completed as part of the project to examine SWP approaches in selected areas of North America and Australia. The results of this project indicate a lack of awareness, data, tools, training, funding and expertise as well as the need for a more collaborative approach between stakeholders in Alberta. Several concerns over perceived risks to drinking water sources were identified including risks from extreme weather (e.g. floods, drought), development pressures, stormwater, algal blooms, industry, recreation and livestock. [3]

Although Drinking Water Safety Plans (DWSPs) are mandatory for municipalities in Alberta, they often lack the attention and detail needed to effectively assess and mitigate risks to drinking water sources. For example, the DWSPs are often lacking information and validation of potential contamination of drinking water sources from adjacent land use activities and operations. The guide to "Protecting Sources of Drinking Water in Alberta" developed by the SWP project team is a good first step to providing direction for drinking water providers on SWP planning. Several communities have voluntarily developed SWP plans including Edmonton, Calgary, Camrose, Grande Cache, Grimshaw, Wabasca, Siksika Nation, Frog Lake First Nation, Piikani Nation, Bigstone Cree Nation and Saddle Cree Nation. Also, several tools exist in Alberta to support SWP such as the Alberta River Basins site[4], Surface Water Quality Data site[5], Alberta Water Well Information Database[6] and the Environmental Site Assessment Repository[7],

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[2] American Water Works Association. 2018. *Source Water Protection Justification Toolkit*. Available online: https://www.awwa.org/LinkClick.aspx?fileticket=XHjsy8Uosj8%3d&portalid=0. Accessed April 2019.
[3] Alberta Water Council. 2019. Protecting Sources of Drinking Water in Alberta. Available online: https://awchome.ca/Projects/CurrentProjects/ProtectingSourcesDrinkingWater/tabid/217/Default.aspx
[4] Government of Alberta. 2019. Alberta River Basins. Available online: https://rivers.alberta.ca/
[5] Government of Alberta. 2019. Surface Water Quality Data. https://www.alberta.ca/surface-water-quality-data.aspx
[6] Government of Alberta. 2019. Water Well Information Database. http://groundwater.alberta.ca/WaterWells/d/
[7] Government of Alberta. 2019. Environmental Site Assessment Repository. https://www.alberta.ca/environmental-site-assessment-repository.aspx

but there is no centralized inventory of these tools online. Furthermore, most municipalities and non-municipal drinking water providers in Alberta do not have the tools or resources in-house to do SWP on their own, particularly small and rural communities. Thus, without further collaboration and the development of SWP tools and resources, SWP efforts will continue to be ad hoc and lack the consistency needed to manage source water risks into the future.

There is a need to develop and deliver a suite of practical tools and resources to assist drinking water providers and local decision makers in Alberta to understand, assess and mitigate risks to their drinking water sources. Additionally, there is a need to integrate SWP approaches and encourage greater collaboration between drinking water providers and stakeholders through the development of SWP plans that align with local priorities, watershed management initiatives and regional plans.

The development of the SWP web platform could be broken down into two phases: risk assessment and implementation. The risk assessment phase would compile and deliver the resources (data and information) required on a centralized web platform including information on 1) delineation of source water areas, 2) available data and information on training on risk assessment, and 3) training to assess source water risks. The implementation phase would focus on how to act on the identified risks through mitigation measures and collaborative partnerships.

How the issue aligns with the AWC's core business, goals and mission, and with the GoA priorities for implementing *Water for Life*

This project aligns well with the AWC's mandate and the goal of *Water for Life* to ensure a safe, secure drinking water supply for Albertans. The project will address some of the main gaps and barriers to SWP in Alberta recently identified by drinking water providers and other stakeholders including the need for more information, tools, training, funding and expertise to support SWP.

The expected benefits of the AWC's involvement in the issue

The project team can build on the AWC's previous SWP project, "Protecting Sources of Drinking Water in Alberta", by developing tools (e.g. land use information, water data, GIS mapping support/tools, workshops and expertise) to assist drinking water providers with the risk assessment process and the development of SWP plans. The desired outcomes include:

- Key messages on risks to drinking water sources are developed by subject matter experts and delivered to key stakeholders
- Current tools are inventoried and assessed to inform the development of a SWP web platform to support municipalities and non-municipal or 'micro' drinking water systems
- Coordinated development and delivery of a SWP web platform to support SWP planning
- Delivery of the web platform would be coordinated between Alberta Environment and Parks, and the Alberta Water and Wastewater Operators Association (AWWOA)

- Drinking water providers have access to the information, tools, skills and support needed to assess risks to their drinking water sources and to develop SWP plans

The AWC's multi-sectoral approach and consensus process supports the need for more collaboration between municipalities, drinking water providers, WPACs, Government of Alberta (GoA) and other stakeholders to decrease water treatment costs and reduce public health risks. Finally, AWC could also use this opportunity to inform the development of a vision and road map (strategic plan) for SWP in Alberta based on the outcomes of this work.

Evidence of a client and potential funding sources

The AWC's current SWP Project Team supports the proposal to proceed with this project, so there is already a willingness to participate in this work. Municipalities, regional water commissions and other drinking water providers (including Indigenous communities) would be the primary clients for the SWP web platform. The AWWOA and WPACs could act as partners to support the development and delivery of the SWP web platform. The GOA would be the primary funder with previously committed funding (of up to $250,000) to the AWC that may be allocated to this project. Funding would be used to build on the current tools available and support the development of the web platform.

Potential stakeholders who would be involved in developing Terms of Reference for the project

- Urban and rural municipalities
- Alberta Water and Wastewater Operators Association (AWWOA)
- WPACs
- Alberta Urban Municipalities Association (AUMA)
- Rural Municipalities of Alberta (RMA)
- Alberta Federation of Rural Water Co-ops (AFRWC)
- Association of Summer Villages of Alberta (ASVA)
- Industry (e.g. mining, oil and gas and petrochemical)
- Indigenous communities and the First Nations – Technical Services Advisory Group
- Alberta Environment and Parks
- Alberta Health and Alberta Health Services
- Alberta Agriculture and Forestry
- Alberta Irrigation Districts Association (AIDA)
- Alberta Energy Regulator (AER) and Alberta Geological Survey (AGS)
- Alberta Innovates and academia, or other research agencies

How timeliness of response would affect the issue

This project would help to advance the development of SWP plans and initiatives to assess and mitigate risks to drinking water sources in Alberta. There are several communities in Alberta

currently looking for tools and resources to support their risk assessment and planning processes and this project would address many of the current and future gaps and barriers to SWP in Alberta. The estimated timeline for this project is winter 2019 to spring 2022.